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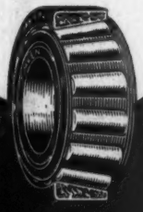

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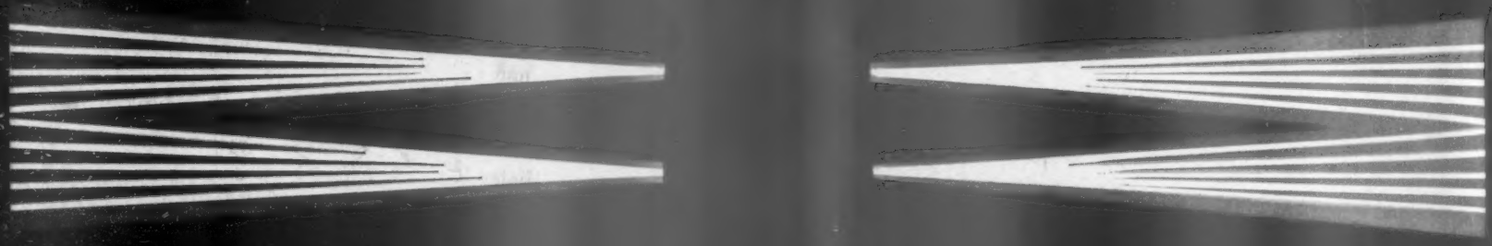

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BAKER CEMENT RETAINER

A Case study of an Actual Well Completion Problem Solved By Using the Baker Cement Retainer

CASE STUDY NO. 402

Problem: To shut off water entering from bottom of producing zone.

Method: Squeeze cement with Baker Cement Retainer equipped with 50' (drillable) Tail Pipe.

Result: Water completely shut off (before performing squeeze, production was cutting 35% water).

• DETAILS •

Field: Kilgore, Texas

Depth of Well: 3700'

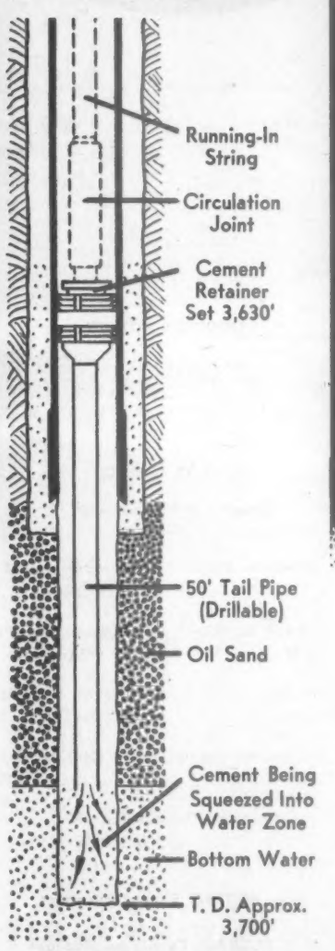
Depth Retainer Set: 3630'

Breakdown Pressure: 500 #

Final Pressure: 2100 #

Number of Sax Put Away: 534

How Cement Discharged: Through lower end of Tail Pipe into open hole.



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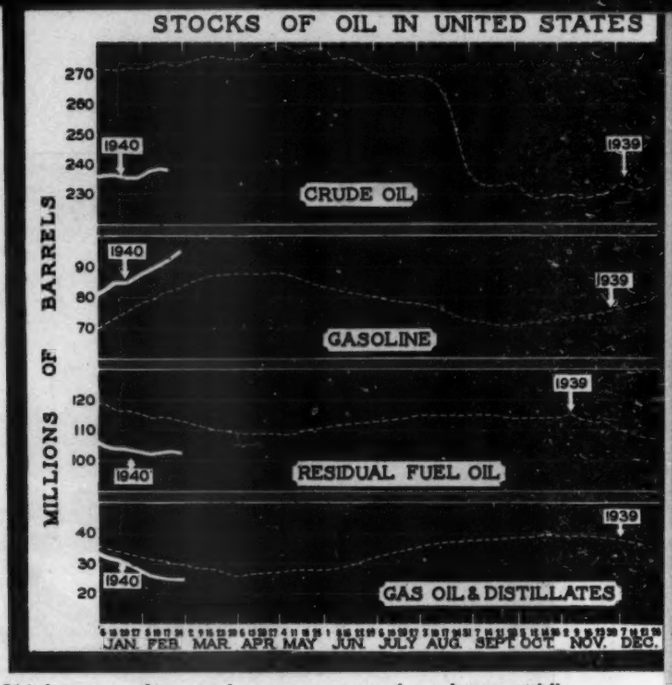
BAKER CEMENT RETAINER

Trends

Illinois Will Have More Opposition in Expanding Markets



GREATER opposition for Illinois in expanding the markets for its increasing production of crude oil was indicated by developments of the past week. The Texas Railroad Commission, after pointing out that its percentage position in the total national market for crude oil had been decreasing over the past year, announced a March daily allowable of 1,479,521 bbl., which is 148,921 bbl. daily larger than the Bureau of Mines estimated Texas demand for that month.

Louisiana has announced a March allowable greater than the B. of M. recommendation and similar action may be taken by one or more other states.

Developments which brought this about reflect the increasing importance of the Illinois basin in crude markets. Texas and Louisiana have lost Atlantic seaboard business to Illinois and further inroads are threatened.

Market observers doubt that Texas will be successful in competing with Illinois unless price concessions are offered. With tanker rates on movements from the Gulf Coast to the East Coast continuing around 65 cents per barrel, Illinois has a transportation advantage over Texas of approximately 50 per cent. This is comparable to the advantage that Illinois always has had over Kansas and Oklahoma in the pipe-line movement of crude to middle western refineries. With this transportation situation in mind those familiar with market conditions believe it would have been better for all concerned had Texas and Louisiana accepted curtailed outlets during March in line with B. of M. recommendations.

The Texas situation is further complicated by the action of another three-judge federal-court decision holding that the present method of applying proration in East Texas is illegal. While the Texas Railroad Commission has announced that it will appeal the decision, the plaintiffs in the case—one of which is the Humble Oil & Refining Co., the field's largest producer—may be allowed to increase their production.

CRUDE PRODUCTION *3,738,043 bbl. daily average—up 18,410 bbl. One year ago 3,333,122 bbl.*

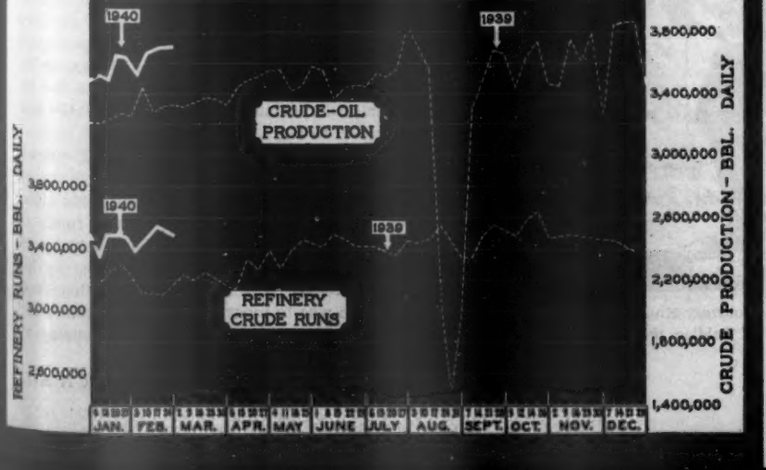
CRUDE STOCKS *238,928,000 bbl. as of February 17—down 582,000 bbl. One year ago 272,052,000 bbl.*

GASOLINE STOCKS *96,719,000 bbl. as of February 24 — up 2,734,000 bbl. One year ago 84,245,000 bbl.*

RESIDUAL FUEL-OIL STOCKS *103,419,000 bbl. as of February 24 — down 5,000. One year ago 113,353,000 bbl.*

GAS OIL AND DISTILLATES *25,390,000 bbl. as of February 24—down 486,000. One year ago 29,466,000 bbl.*

REFINERY RUNS *3,490,000 bbl. daily week ended February 24 — down 80,000 bbl. One year ago 3,185,000 bbl.*



DAILY AVERAGE PRODUCTION FOR WEEK

	Feb. 24, 1940	Bur. Mines Feb. est. of demand	Feb. state allowables	Feb. 17, 1940
Oklahoma City	99,100	.....	.....	99,800
Seminole fields	39,350	.....	.....	40,625
Remainder of state	281,850	.....	.....	288,925
Total Oklahoma	420,300	429,000	429,000	429,350
East Texas	397,340	.....	.....	397,298
West Texas	247,553	.....	.....	225,189
North Central Texas	135,294	.....	.....	132,298
Texas Panhandle	77,087	.....	.....	70,797
East Central Texas	79,613	.....	.....	78,095
Gulf Coast Texas	358,946	.....	.....	357,550
Southwest Texas	100,195	.....	.....	99,950
Total Texas	1,396,028	1,371,400	1,390,151	1,361,177
North Louisiana	67,940	.....	.....	68,665
Gulf Coast Louisiana	210,597	.....	.....	209,547
Total Louisiana	278,537	252,800	273,253	278,212
California	606,750	585,900	594,000	626,100
Kansas	173,200	155,500	165,000	176,700
Arkansas	69,270	60,000	70,000	68,290
Mississippi	7,300	700	.....	6,730
Eastern fields	104,700	103,900	.....	100,150
Illinois	414,446	325,500	.....	407,583
Michigan	64,682	64,500	.....	64,871
New Mexico	114,150	100,300	113,000	112,820
Rocky Mountain area	88,680	74,500	.....	87,650
Total United States	3,738,043	3,529,000	.....	3,719,633

It is believed that this will result in legal action by other producers precipitating another crisis in the administration of conservation in the field. The state also will continue the holiday method of proration in East Texas with the field shut down 13 days during March. Arkansas will continue its February allowable in March and April, slightly in excess of the B. of M. recommendations for March.

Illinois production jumped to a new high last week. It is authoritatively stated that this production could have been increased 50,000 to 75,000 bbl. daily if outlets had been available. The Devonian development so far is supporting the statements of those who predicted early in the year that the new pay would prove to be of major importance.

Shown streaming oil 150 ft. and over both slush pits is Sinclair Prairie Oil Co.'s No. 1 Howard, newest field opener in Montague County, North Texas. As shown, the well is blowing at the rate of about 140 bbl. hourly

THE WEEK IN TEXAS

A three-judge federal court at Austin last week told the Texas Railroad Commission that if the commission did not alter its proration schedule in East Texas an injunction would be granted to Humble Oil & Refining Co. and Rowan & Nichols permitting them to increase their production above the present allowable. Commissioner Sadler then suggested that Governor O'Daniel call a special session of the legislature to enact remedial laws but the governor said the issue rested with the commission, which has now ordered an appeal to the United States Supreme Court. The injunction affecting the Humble and Rowan & Nichols properties awaits the court's order.

The commission, criticizing the Bureau of Mines recommendation, increased the state allowable for March 148,921 bbl. over the Bureau estimate of demand.

Texas Commission to Appeal Federal-Court Decision

By D. H. STORMONT

AUSTIN, Tex., Feb. 26.—The Railroad Commission announced today that it would appeal from the oral decision given here last week by the three-judge federal court by which the commission's current proration formula in the East Texas field was invalidated. Thus it is expected that the court will soon issue its written decision and grant Humble Oil & Refining Co. and Rowan & Nichols Oil Co. permanent injunctions. This will allow these two companies to disregard the current commission order and produce their East Texas wells somewhat in the proportion the oil in place under their lease bears to the field as a whole. Since the court has not specifically ruled on the company's claims for higher allowables, the extra oil which will be given the companies under the injunction is not known, but it is believed the additional allowable will approximate 22,000 bbl. daily.

Immediately after the commission's decision was announced, several companies began making plans for filing injunction suits. Some attorneys believe any company which can show it is similarly situated to the Humble and Rowan & Nichols positions, and that the order in force prevents it from recovering its fair share of oil, will have excellent chances of obtaining temporary injunctions. If any operators owning leases in the vicinity of the two companies' leases can show conditions on their leases are similar to those of Humble and Rowan & Nichols, it is believed there is a very good chance of their obtaining an injunction.

There are a large number of properties that can qualify under these conditions, and the additional allowables involved could cause production to get out of bounds. In the first Rowan & Nichols suit, attacking the potential method of allocation, offset operators and the large companies did not show a great tendency to institute proceedings, but in this case the number of leases affected and the oil involved are much larger. It is believed, however, that companies will be slow in filing additional suits, realizing their action may lead to similar proceedings by other companies and in the ultimate they would be no better off, as the increased flow would probably result in a price cut.

The court has not entered its final decision in the suit and it may require the assistance of counsel and perhaps more elaborate conclusions of law. It may withhold the injunction while the appeal is pending, since such action might result in throwing East Texas production wide open.

Commissioner Sadler asked the attorney general's department to request the court to stay execution of judgment pending appeal. If the commission chose to not abide by the court's decision, bond would have to be made. Humble claimed it was losing about $23,000 daily.

Pending the appeal, Chairman Lon Smith said no change will be made in the East Texas order to prevent making the case moot. Plans for holding a hearing in East Texas have been abandoned.

In issuing the March order, which set the allowable at 1,479,521 bbl. daily as compared with the Bureau of Mines estimated-demand figure of 1,330,600 bbl., commission members cited market conditions in Texas which they believed justified their action. Commissioner E. O. Thompson said the commission's analysis of crude stocks, as revealed by responses to questionnaires at the recent state-wide hearing, showed the available supply of crude to be exceedingly low.

"An example was the Humble," he said, "which reported 11,000,000 bbl. of crude stocks, but actually for movement had only 200,000 bbl. This situation is especially true in most of the fields of Texas. Last week 907,000 bbl. were withdrawn from Texas storage. That could not keep up because the storage was not available. Therefore, the increase was to meet the market demand. . . . Texas cannot afford to drive its markets away by

A TEXAS VIEWPOINT . . .

Courtesy Knott, in the Dallas News
"Tired of holding their babies"

not having sufficient crude to meet it. The need is indicated by ready, willing and able buyers. For instance, the Gulf was about to buy 5,000 bbl. of Arkansas crude. We made it available in Texas and therefore it will not be driven to buy out of the state."

Point to Many Requests

Further arguing the urgent demand for more oil, the commission pointed to the large number of current requests for allowable increases now on file. Gulf Oil Corp. has asked for 15,000 bbl. of additional oil in West Texas fields; Conroe operators claim a market demand for 47,000 bbl. daily against an allowable of 21,000 bbl.; demand for the asphalt-base crudes of Cayuga, Talco and Sulphur Bluff has increased with purchasers wanting additional oil.

Average daily production in Texas during March is expected to run some 3 per cent lower than the top allowable due to underproducing of allowables. This is expected to lower the overage to 105,536 bbl. for the whole of March. Most of the proration districts shared in the increased March allowables with West Texas and Southwest Texas, which bore the brunt of the initial allowable cut when 7-day production was restored in February, being given the larger portion. A total of 35 fields were granted increases in their basic allowables, 10 of which were confined to the Southwest Texas district and 16 in West Texas. One of the outstanding discrepancies in the February order was removed; that of giving K.M.A. an average allowable of 37 bbl. while Hull-Silk field nearby, which is some 300 ft. deeper, was allowed only 27 bbl. daily. A comparison of the various district allowables as of recent dates and of March 1 follows:

District—	Feb. 1	Feb. 24	Mar. 1
Southwest Texas	223,400	230,918	244,211
Gulf Coast	225,372	233,584	239,632
East Central	80,015	80,419	87,408
East Texas*	404,480	404,483	400,645
West Central	56,161	56,802	56,782
West Texas	196,656	225,818	246,216
North Texas	124,036	121,318	123,858
Panhandle	80,031	80,709	80,769
Total	1,390,151	1,434,051	1,479,521

*Net daily average based on top allowable of 690,000 bbl. daily with 12 shutdown days in February and 13 for March.

At a conference held Monday the commission increased the allowable of the Conroe field 7,000 bbl. per day, which brings the Gulf Coast allowable up to 246,632 bbl. and the total allowable of the state up to 1,486,521 bbl.

The East Texas field will again be placed on production holidays during the month, there being scheduled 13 days for March with the top allowable held at 690,000 bbl. The field will be shut in each Saturday, Sunday and Wednesday, except March 2. Allocation of a minimum of 20 bbl. per well, which the federal court held was unreasonable, was renewed.

Commissioner Jerry Sadler, who did not vote with the other two commissioners for the East Texas case to be appealed, after the court's decision was made known wrote Governor O'Daniel asking that a special session of the legislature be called. It was his belief that the legislature could pass another marginal-well law and additional legislation which would remedy the situation in East Texas. On Saturday Governor O'Daniel replied that he could see no reason for the session being called to perform a duty which the law has placed upon the Railroad Commission. In his reply he pointed out that the federal court's opinion did not raise question as to the constitutionality of the Texas conservation laws, but it held the commission's order was not in compliance with the law. The urgent matter, in his opinion, was not that the legislature be called to pass a new proration law, but rather for the commission to draft a legal order under the existing law.

The court's decision, which indicated that an equitable proration order should be based solely on oil in place, was interpreted by some attorneys as being only applicable to the properties of the two companies in East Texas. However, if other East Texas companies can show that they are being affected similarly by the proration formula, it is believed their chances of obtaining court relief are excellent. While the ruling applied only to the properties of these two companies, some regard it as evident that acreage and oil in place must be given more weight in future proration orders.

Conclusions of the court generally upheld contentions of Humble and Rowan & Nichols that the provision in the current East Texas order making an allocation of 20 bbl. to each well, other than marginal, and prorating the remainder according to a proration formula, worked inequitably against the properties with greater reserves. The court found that plaintiff F. W. Fischer was not being hurt by the order and was denied an injunction.

Court Presents Conclusions of Law

The opinion of the three-judge court was delivered by Judge Samuel Sibley, in which Judges R. J. McMillan and James V. Allred concurred.

The court, after stating that the conclusions are not final and in the nature of conclusions of law, said: "But we reserve the right to modify or change them so as to express more exactly what we think the law is if it becomes necessary. But for the present purposes we agree:

"1. The court has jurisdiction in each case.

"2. In the case of F. W. Fischer, an injunction either temporary or permanent, ought not to be granted because no irreparable injury is shown to him by the operation of the order. It does not appear to operate unreasonably as to him.

"We find the situation is otherwise as to the other litigants. As to Rowan & Nichols and Humble, we think that the present injury to each of them is clear. It is clearly and practically admitted. The only reply to it is that in the future it will be corrected. We regret that this contingency is so uncertain as to make it our duty to look to the present operation and to show they have established such an injury that in its nature is irreparable; and that without remedy at law makes it our duty to examine the order or that part of the order.

"That part of the order which fixes the top allowable, the commission had the power to make to prevent waste. It is not arbitrary or unreasonable.

"The statute which declares that pumping wells not capable of producing more than 20 bbl. over a 30-day period are marginal wells and are not to be restricted by the commission is not patently invalid. They are wholly on the edges of the field, and are approaching exhaustion. The legislature could make of them a separate class, and in view of the expense of operating them by pump and their probably short life, the fixed allowable granted them is probably not arbitrarily fixed. The amount of the present top allowable to them is less than 1 per cent, and the effect on fairway wells, which is here complained of, is too uncertain and insignificant to require a decision on the constitutionality of the statutory classification.

"The portion of the order which prorates the remainder of top allowable among the nonmarginal leases and wells so operates that about three-fourths of it is distributed on a flat basis per well so as to give each well an initial 20 bbl. per day. With 3 days of shutdown each week, this makes an average of 11.7 bbl. per day. The remaining one-fourth is prorated by a formula which takes account of the productive capacity or potential per well and the acreage, sand thickness, and bottomhole pressure of each lease. All these factors are considered in fixing the allowables for the wells on the lease.

"This operates to restrict more drastically the production from the best wells and leases in the fairway where are those of Rowan & Nichols and most of those of Humble Oil, than that from less productive wells to the east and west and tracts more densely drilled also in the fairway. For these reasons, the order is so unreasonable as to make it contrary to the statutes and the fourteenth amendment. The question under the two seems to be approximately the same. If the order is unreasonable, the statute does not give the commission the authority to make it. If it is unreasonable as to appear arbitrary, the Constitution does not allow it to be done either by the legislature or the commission.

"The commission's orders of this sort were held unreasonable. A later order which combined per well and potential, so that about one-half of the total was distributed according to potential, was upheld as reasonable.

"It is not now held that no flat per-well allowable could be made, but only that three-fourths of the total should not be so proportioned.

"The reason for distributing three-fourths of the allowable on a flat basis per well or for distributing any of it on that basis is not precisely disclosed. As in the case of marginal wells, it seems to be thought necessary in order to keep the poorer wells pumping or going at all. If they were forced out, the oil that could be produced might never be produced and therefore wasted, or the shutdown might be a detriment to the owner's property according to the Constitution. The evidence here, however, is that even with a pumping well, production can be profitably continued on 5 to 10 bbl. per day. We can think of no good reason why a higher allowable should be fixed for non-marginal wells when to do so would make three-fourths of the distributable oil on a basis which is neither according to the productive capacity of the well nor according to the amount of oil on the leases.

"That the legislature fixed a figure of 20 bbl. on marginal wells is without great significance for they are perishing wells. Those on the border line will soon enough enter that class and need not be treated as such.

"To distribute three-fourths of the top allowable on a flat basis per well without regard to oil reserves of the leases or the productive capacity of wells which constitutes the value of the property, is unreasonable, and therefore in violation of the Constitution and the statutes.

"It is not for us to suggest a proposal for a formula. We think the present proportion unsustainable. We do not say that the time element and the probable life of the well may not be considered in the proportionment, although there is necessarily much uncertainty involved. We do not say that ultimately each lease must be allowed to produce in exact proportion to its reserves or potential. All these factors may be given consideration in the efforts to achieve the public aim of conservation.

"Some inequalities attend all legal regulations and must be borne, but the regulation itself must be based on fair principle and founded on good reason. Previous decisions have established a flat per-well proportionment to be unreasonable and also one which was substantially that, although some effect was given a well potential. We now hold that with the wide differences in well density and well capacities that in the East Texas field, a proportionment of three-fourths on a flat well basis is not justified on good reason and is unreasonable.

"As a conclusion from this holding we will deny a temporary injunction to Rowan & Nichols for the reason that one was denied in respect to the Humble Co. and we think it best to let matters go along on an even keel.

"A permanent injunction will be granted both to the Rowan & Nichols and Humble Oil, but we do not wish to enter an injunctive decree and upset the oil field. For that reason, we will await a decision as to whether or not appeal is to be taken or whether or not the decision will be submitted to on the part of the Railroad Commission. If it is submitted to by the Railroad Commission, they probably will require time to make a new order. If it is to be appealed, we will have to enter the final decree that it may be appealed from. But we wish to handle this in a practical way. If there is an appeal on the findings of fact, we will require the assistance of counsel and perhaps more elaborate conclusions of law. But this is our decision for the present."

SPARKS . . . FROM THE NEWS

HEADACHE: The refining division has hung up a new all-time record in the volume of its gasoline stocks. But nobody is feeling good about it.

ONE IN 28 YEARS: This (February 29th) is the fifth February issue of The Oil and Gas Journal. The office statistician says this occurs only once in 28 years and the next five-issue February will be in 1968.

STATION LABORATORIES: An eastern company will operate 40 service stations as "training schools" and "sales laboratories" for its dealers, a further indication of the increasing importance placed on merchandising practices by major operators.

SUCCESS: While it is too early to make a categorical prediction, it seems fairly certain that due to the stiff opposition put up by the oil industry, the Cole bill in its present form will die in committee. Substitute measures are already being mentioned.

SANS FANFARE: With little publicity and no national excitement, the Loco Hills field in New Mexico—extended about 3 miles the past week—already includes several pools and is developing into one of the larger western plains oil areas.

MARKET RACE: Texas will attempt to regain, in March, markets lost to Illinois and will ignore the B. of M. recommendations as to demand for Lone Star crude. In this competition the advantage obviously rests with Illinois, owing to transportation conditions.

NEW PAY GAINS: They acidized the new Trinity (deep-pay) discovery in Smith County, East Texas, and increased its production to more than 600 bbl. daily.

FAST PAYOUT: A North Texas operator recently completed a 180-ft. well in the evening after spudding in at 2 p.m. The next morning he swabbed 6 bbl. of oil, which was trucked into town and sold at a price to pay his only cost—drilling-engine fuel.

NO AUCTION: The Indian Department has done away with auction sales at the Five Civilized Tribes Agency in Muskogee, Okla., sealed bids only being received, with the result that oil men are predicting there will be a sharp decline in the demand for Indian leases.

TRIAL BALLOON: Quickly denied this week was a report that the Mexican Government and a large operator were on the verge of reaching an agreement on terms for payment of expropriated holdings. So far there has been no break in the united front of the expropriated companies.

MORE OUTLETS: The Province of Alberta believes it could be a more important factor in supplying Canada's oil requirements and thus also be of more aid in solving the British Empire's major war problem of petroleum, if its Turner Valley field had additional pipe-line outlets.

ANOTHER STEP: Another federal-court decision sustaining objections to the manner of applying conservation in the East Texas field brings closer the time when the Texas Railroad Commission will have to arrive at a legal solution of this recurrent problem.

COPY CAT: Japan seems to have borrowed a leaf from the United States in its abrogation of the trade treaty with the Netherlands. If the agreement isn't renewed, a good-sized monkey wrench may be thrown into the Netherland East Indies oil industry.

AWAKENING Forest City basin operators are coming out of the winter hibernation with several new wildcats getting under way and work being resumed at old tests.

RECYCLING PROSPECT: Field tests recently conducted in Louisiana's Cotton Valley field indicate that the field is a major prospect for recycling operations. Yield of 62-gravity condensate averages over 3 g.p.m.

IRON HORSE DOUBLES IN BRASS . . .

A Pennsylvania Railroad locomotive was called into unusual service recently when the Continental Refining Co. plant at Oil City, Pa., had to shut down its boiler house. The locomotive supplied steam to the refinery

Illinois Basin Chapter of A. P. I. Hears Paper on Well Shooting

By HARRY F. SIMONS

MT. VERNON, Ill., Feb. 26.—Nearly 200 members of the Illinois basin chapter, Division of Production of the American Petroleum Institute, gathered in Mt. Vernon Friday evening, February 23 for dinner and a technical session. A paper on "Oil-Well Shooting Practice," delivered by Paul F. Lewis, Du Pont de Nemours Co., Tulsa, was followed by extensive discussion.

The Illinois basin chapter was organized less than a year ago as a branch of the eastern division of the A.P.I. to serve numerous oil men now at work in the area. Due to the pressure of development work, many members of the group have been prevented from devoting as much time as they would like to the organization. A wide range of ideas comes up for discussion at the meetings, due to members having come into the state from many areas. Drilling and production practices in Illinois today reflect the background of operators and personnel.

William A. Watkins, Carter Oil Co., Mattoon, is chairman of the group; Bart De Laat, Pure Oil Co., Olney, is first vice chairman; Jake Haas, Adams Oil & Gas Co., Centralia, second vice chairman, and Verner Jones, Magnolia Petroleum Co., Mattoon, secretary-treasurer.

The advisory committee consists of C. C. Carroll, Ohio Oil Co., Marshall; A. F. Lager, Siosi Oil Co., Terre Haute, Ind.; E. J. Reading, Sun Oil Co., Evansville, Ind.; T. B. Steele, Kewanee Oil Co., Robinson; Frank Wilson, Sohio Oil Co., Mt. Vernon; Dr. A. H. Bell, Illinois Geological Survey, Urbana; A. E. Chester, Magnolia Petroleum Co., Salem; W. S. Crowin, Tide Water Associated Oil Co., Robinson; W. C. Kneale, Texas Co., Salem; Alex McCandless, Mahutska Oil Co., Robinson, and E. G. Robinson, Shell Oil Co., Inc., Centralia.

Next Meeting in June

The date and place for the all-day annual meeting of the group have not been selected, although scheduled for some time in June. Preparation of papers is already under way. A paper by D. N. Sargent, Sargent Engineering Co., on "Oil-Well Pumping," which was scheduled for reading at Friday's meeting by Lew West, was postponed because of lack of time until the annual meeting. Mr. Sargent is recovering from an appendectomy and was not able to attend.

In his talk on "Oil-Well Shooting Practice," Mr. Lewis said that until recently so little work had been done in the way of studying oil-well shooting that there is little data available for converting this operation from a gamble to a certainty. He pointed out that there is much room for improvement in the planning and engineering and better results can be obtained by more careful diagnosis of the conditions in the well when selecting a shot. A comprehensive study of the drilling log, drill cuttings, and cores will indicate roughly whether the rock to be shot is hard or soft, consolidated or unconsolidated, frangible or infrangible, of high or low crushing strength, permeable or impermeable and saturated or unsaturated.

A history of the progress of oil-well shooting since its introduction near Titusville, Pa., where black blasting powder was used, to the present where several types of nitroglycerin are employed, was given by Mr. Lewis. He also reviewed the different methods of exploding oil-well shots from the "Jack squib" to the present-day waterproof time bombs. The introduction of the latter device allowed the use of other than liquid stemming when shooting oil wells.

"The only explosives available at present for oil-well shooting are liquid nitroglycerin, gelatinized or solidified nitroglycerin and gelatin dynamite; the first two are, to all practical intent and purposes, 100 per cent explosives while the latter is available in various grades but when used for well shooting, is used only in the 80 per cent grade," the author said.

Nitroglycerin Analyzed

Mr. Lewis next outlined the composition of nitroglycerin, composition of gases of explosion, heat of explosion, temperature of explosion, pressure of explosion, measurement of gas pressure, density of loading, energy content, work preformed and gave a comparison of other explosives with nitroglycerin. In summing up material he pointed out that a scientific study of explosives has brought forth much data, largely by empirical methods and, while the results do not agree exactly, they are close enough to be of great value if and when it is learned how to apply them to conditions in oil wells. Variability of factors involved in oil-well shooting complicate the problem, he said.

"We must consider," he said, "that, aside from the resistance of the rock itself to the disruptive forces of the explosion, conditions of normal temperature and pressure can and do greatly influence the action and consequently the execution characteristics of oil-well explosives. Unfortunately these factors cause a condition of instability in the explosive which causes erratic and sometimes unpredictable results."

According to Mr. Lewis there is little to fear from liquid nitroglycerin where pressure is concerned as, being a liquid, it is practically incompressible. He added, however, that where pressure is extremely high, a temperature increase may be expected with the result a premature explosion may occur due to heat as the critical temperature for nitroglycerin under confinement is from 150° to 180° F.

Solidified nitroglycerin is composed of 90 per cent nitroglycerin, 7 per cent guncotton and 1 per cent chalk (anti-acid) according to Mr. Lewis. By dissolving guncotton in nitroglycerin the resulting gelatinous product is greatly reduced in sensitiveness to friction and impact and at maximum density is somewhat deficient in oxygen so that a much greater impulse is required to explode it at normal pressure and temperature. He added that at atmospheric temperature and pressure it is a somewhat spongy, rubbery solid and, being compressible, is adversely affected by hydrostatic pressure in the well. Due to the oxygen deficiency it is compounded so that tiny air bubbles are trapped.

Effect of Excessive Pressure

The higher the density of the explosives under atmospheric conditions, the more susceptible they are to hydrostatic pressure. As solidified nitroglycerin is one of the most dense explosives, its ability to explode can be destroyed completely by excessive pressure, Mr. Lewis said. The pressure also adversely affects velocity of detonation and may unfavorably affect the execution value of the shot; he added, however, that low velocity is sometimes desirable and is a point worth considering in designing a shot.

(Continued on Page 39)

Ed Shakely, Shell Oil Co., Inc., exploration engineer; Bill Lewis, drilling contractor; Verner Jones, geologist, Magnolia Petroleum Corp. and secretary-treasurer of the Illinois basin chapter, A.P.I., and "Cotton" Mahin, tool pusher, Carl Short Drilling Co.

Among the witnesses that appeared before the Cole committee to present testimony against federal oil regulation were the above executives, E. H. Moore, president, E. H. Moore, Inc., Tulsa; M. G. Cheney, president, Anzac Oil Co., Coleman, Tex., and John M. Lovejoy, president, Seaboard Oil Co., New York City

Cole Committee Ends Hearings

By HENRY D. RALPH

WASHINGTON, D. C., Feb. 27.—Opposition of the oil industry and oil-producing states to the Cole bill, H.R. 7372, for federal regulation of oil production has been so vigorous and telling at hearings during the past fortnight that observers are confident that this bill in its present form will die in committee.

This will not end the threat of federal intervention, for the general expectation is that the subcommittee which has been holding the hearings will draft a substitute measure containing less sweeping powers, but nevertheless giving the federal Government some degree of control over conservation.

Such a substitute might take one of two forms, according to corridor discussions around the Capitol. It might be a bill directing the Department of the Interior to fix production standards in about the same way as authorized by the present Cole bill, but only in states not having conservation laws. The effect of this probably would be to force California and Illinois to enact satisfactory state legislation at an early date, but it would be subject to the same arguments of unconstitutionality as the Cole bill and would be regarded as an entering wedge for general federal control, since the next step might be to have the federal law specify the nature of state regulations. Chairman Cole has denied preparing such a substitute.

The other possibility is a law fixing state quotas for oil moving in interstate commerce, modeled after some of the recent agricultural legislation. Legislation of this type could set up conservation standards and force state regulations to comply with them before the state would be permitted to ship its quota in interstate commerce.

The hearings were adjourned today, subject to call of the chairman, concluding the presentation of evidence, except for the possibility that Col. Ernest O. Thompson may appear at a later date.

Appearing this morning were Congressman W. E. Disney, opposing the bill; Paul Hadlick; John F. Budke, Franklin, Pa., presenting a statement in favor of the measure on behalf of John E. McComb and a group of small producers of Venango County, Pennsylvania; and W. D. Brookings, United States Chamber of Commerce, who presented a letter from the president of the chamber, W. Gibson Carey, recording the organization's opposition to the Cole bill.

The Cole committee concluded its hearing on the federal control bill Tuesday noon following a week of presentation of the industry's opposition to the measure, covering technical, legal and economic phases of testimony

The opposition to the present Cole bill has been one of the most thorough presentations by an industry before any congressional committee. The bill was shown to be unnecessary, unconstitutional, and impractical by all branches of the oil industry and by the officials of all oil-producing states. Such opposition makes a formidable obstacle for the legislation, and there is little prospect that it could get through Congress in its present form, certainly not at this session.

During the past week the committee heard technical men from various sections of the country deny the allegations of the Department of the Interior that avoidable physical waste exists in significant quantities and declare that state laws and the industry itself are using all practicable means to advance conservation.

A charge that the Interior Department has violated federal law in its radio propaganda in support of the Cole bill was made to the committee Monday by Russell B. Brown, general counsel for the Independent Petroleum Association of America.

After Mr. Brown's recital of Interior Department broadcasts, Chairman Cole said these references to pending legislation are just as objectionable to the committee as to the industry and he has no patience with government employes attempting to influence legislation, although he appreciates the concern of those working with the problem to bring to the attention of the public the necessity of preventing waste of oil.

Mr. Brown replied that the industry has promoted conservation and the radio attacks were entirely unjustified. Chairman Cole also requested Mr. Brown to file the report and other data of his Committee of 36 in connection with the August compact meeting and the shutdown.

Mr. Brown filed a brief by Tom Anglin and W. J. Holloway, of Oklahoma, on the unconstitutionality of the bill.

Frank Buttram, president of the Independent Petroleum Association of America, told the committee that the bill would kill off the smaller oil producers and centralize the industry in the larger companies. Stressing the right of the homeowner and farmer to possess oil deposits underlying their property, Mr. Buttram said the bill would divide the right of the landowner to his own property and would tell him that he and his agents cannot produce oil according to the laws of his state which he helps to make, but must submit to some distant government employe. He declared:

"This bill would create what would be equivalent to a state monopoly. With one man in control of the nation's oil production, it is doubtful whether the farmer would continue to enjoy the same advantages which have been his under our American system, since smaller units to which he must look for his entry into the oil industry would be hard-pressed if not eliminated by this measure. The ulti-

mate effect of this bill, even though it should not transfer complete control of the oil industry to the federal Government, would be to centralize that control in the larger companies and progressively kill off the smaller companies, who because of the financial strain involved in meeting the requirements of operating under this bill would die."

Mr. Buttram also criticized the Government's handling of oil produced from the Osage Reservation in Oklahoma as showing that the Interior Department has not used any waste-prevention measures not adopted by the industry elsewhere.

Less regulation of the oil industry instead of more was demanded by Paul E. Hadlick, secretary and counsel of the National Oil Marketers Association.

Rep. Frank Carlson, of Kansas, filed a statement opposing the bill and defending the record of the states in conservation and opposing further centralized government control.

Evidence Summarized

J. C. Hunter, Abilene, Tex., president, Mid-Continent Oil and Gas Association, concluding the industry's presentation, summarized the evidence earlier presented. He said it seems clear it is the definite objective of "some federal bureaus and agencies in Washington to secure federal legislation completely controlling the production, conservation, and wastage of petroleum, natural gas, and other hydrocarbons in the United States." He reiterated the industry's belief in conservation and its contention that conservation regulation is a state function, and pointed to the industry's achievements in that line. In that connection, he declared the industry is practicing conservation methods in advance of those provided by public regulation, and listed some of the specific steps being taken by producers. He argued that no serious nor alarming avoidable waste now exists, and that national defense is no justification for federal control.

Declaring he believes the Illinois situation will be taken care of in due time by action of that state, Judge Hunter told the committee that, even if there were to be no conservation in Illinois during the life of those reserves, the total quantity of oil lost would be only enough to provide the nation's supply for one month. Enactment of federal control solely to remedy this situation, he declared, "would be trading an awful lot of democracy for an awful little bit of oil."

Speaking also for the Western Petroleum Refiners Association, Fayette B. Dow, counsel for the National Petroleum Association, Washington, D. C., opposed "intervention of the federal Government in a situation which is being worked out constitutionally and in such a manner as to protect fully the public interest." He declared adoption of the Cole bill would lead eventually to complete control of the oil industry by a federal officer. He particularly attacked the section of the bill which provides that in hearings before the federal authorities "the rules of evidence prevailing in courts of law or equity shall not be controlling." He quoted recent Supreme Court decisions to show the very limited opportunity for review of decisions of a federal officer such as the bill would set up over the oil industry.

William J. Kemnitzer, Los Angeles economic geologist, opposed the bill on numerous grounds. He contended the federal Government is not more capable of conserving petroleum than are the states and that we should not jeopardize our democratic form of government to solve conservation problems.

Clarence J. Schock, Mount Joy, Pa., spoke for the Independent Petroleum Jobbers Association of Pennsylvania. He attacked the Cole bill primarily because of its provisions making permanent the Connally Act, which he said operates to eliminate competition in petroleum marketing. Instead of the Connally Act, he said, there should be a law prohibiting the movement in interstate commerce of crude or its products from any state which undertakes to control production.

An impressive array of technical data on the progress of conservation was presented in an engineering survey of waste production, covering many fields in various sections.

Following the opening statement of Ralph J. Schilthuis of Houston, Tex., Charles V. Millikan, chief engineer of Amerada Petroleum Corp., Tulsa, described waste-prevention practices in Oklahoma, Kansas, and the Rocky Mountain area. He pointed to specific developments and told the committee the industry has not merely submitted to conservation legislation and rules and regulations of constituted authorities, but has actively supported them. The industry, he said, has developed special practices of completing and repairing wells, such as gun-perforating, squeeze-cementing, and chemical-plugging to obtain and maintain better control of production.

The California situation was reviewed by Robert E. Allen, consulting engineer of Los Angeles, who appeared for the California Oil and Gas Association. He indicated that in several California fields avoidable waste is a thing of the past and "most of the producers probably wish that the field had been produced in the manner which the experience gained to date indicates would have been more efficient." He made the point that "we cannot employ ideas and equipment as yet unknown, but we can always look backward and see the savings which could have been made by the use of modern methods," and waste avoidance is keeping pace with the discoveries of science.

The great majority of responsible producers in the new fields of Illinois favor a state oil and gas-conservation law, but emphatically are opposed to federal control, said Ernest G. Robinson, production superintendent, Shell Oil Co., Inc., St. Louis. He presented a detailed statement covering waste-prevention practices in Illinois, Kentucky, Indiana, Ohio, and Michigan.

Striking Example

Pennsylvania's Bradford field provides one of America's most striking examples of the success of the industry in discovering and adopting improved methods for conservation of oil, according to Forest E. Dorn, president, Forest Oil Co., Bradford, Pa., and it furnishes outstanding proof that federal control of production is a needless and possibly dangerous expedient.

A summary of engineering testimony and technological advances made in producing oil was presented by Francis E. Heath, chief engineer, Sun Oil Co., Dallas, Tex., who contended that in recent years aboveground avoidable waste has been virtually eliminated.

Problems of physical waste, economic waste and property rights involved in well spacing were discussed by M. G. Cheney, president, Anzac Oil Co., Coleman, Tex., who told the committee the industry itself has made rapid progress toward the solution of the well-spacing problem during recent years, mainly through the discovery and application of sound engineering practices, and that reasonably complete application of these principles is forecast for the near future.

Explaining the problems of well spacing, he said:

"It is generally recognized that either large physical or large economic waste or both may result from improper spacing of wells within an oil field. If the wells are drilled too far apart some oil otherwise economically recoverable may be left in the reservoir, and if drilled too closely both oil and capital may be wasted. The physical and economic factors which determine optimum spacing of wells are now determinable within reasonable limits and should be applied in the development of new fields.

"As a result of continued investigation, there has been a marked trend toward relatively wider spacing of wells. This trend appears fully justified from the viewpoint of prevention of both economic and physical waste. That the general welfare of communities, states and the nation is promoted by the application of efficient engineering practices, including relatively wide spacing of wells, is now generally accepted by the oil industry and those in charge of regulation. Many of the advantages of unit operation can be obtained through the proper spacing of wells. During more recent years the state legislatures and conservation agencies have been alert to adopt and improve orders providing for optimum spacing of wells in newly discovered oil fields, or, where possible, in those fields that are undergoing additional development."

Challenged by Henry

Winston P. Henry, an independent operator of Houston, Tex., challenged the assumption of the Cole bill that state authorities and oil operators are guilty of waste and that the federal Government, if given control, would be more efficient. He cited as an example the government-controlled lands of the Osage Indians in Osage County, Oklahoma, where he said oil has been produced for about 35 years. "Only in recent years," he declared, "have any progressive steps been taken along the lines of conservation, and nearly all these progressive measures have been promoted and inaugurated by individual producers and not by the federal Government."

Turning to unit operation, Mr. Henry said that every oil man will admit unit operation is desirable, though it is not a cure-all, but that in most cases it is unworkable in practice. Compulsory unitization is wrong in principle and impossible of accomplishment except by the destruction of individual property rights guaranteed by the Constitution, he declared, adding that most of the advantages of unitized operations are now being obtained under state regulation.

One practical effect of the Cole bill, were it enacted, would be the inevitable elimination of the small, independent operator "who is now the backbone of the oil industry," the committee was told by Jake L. Hamon, Dallas, Tex., speaking on behalf of the National Stripper Well Association. Such an eventuality would be against the interests of conservation, he pointed out, for it would mean the permanent abandonment of many small wells which can continue to produce a barrel or two a day for a long time to come. Nearly three-fourths of the producing wells in this country are stripper wells, Mr. Hamon said, and many are operated on a profit margin so small that any added costs would force abandonment.

Criticism of the Interior Department's report on specific instances of waste was voiced by Paul R. Greever, of Cody, Wyo., appearing on behalf of the Rocky Mountain Oil and Gas Association.

In particular, Mr. Greever pointed to the citation of gas wastage in the Garland field as most unfair, as the gas going to waste there is so poisonous as to constitute a hazard to those working around it. Discussing the alleged wastage in the Lance Creek, Wyo., field, he said: "If, as indicated, waste now occurs on lands under the control of the Interior Department, how could improvement be expected should the Interior Department take over the control of now-private lands?"

Nothing could be more certain to bring on the long-predicted shortage of petroleum than federal regulation of discovery efforts, according to

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Alberta Prepared to Greatly Expand Oil Operations

By J. L. IRWIN

This article is extremely timely in view of Canada's position as a belligerent power in the current war. The author is statistician for the Department of Lands and Mines of the Government of the Province of Alberta

ALBERTA'S oil development, particularly at such a period as this in the world's history, represents one of Canada's most important industries. With additional markets secured, not only could present production immediately be doubled but an intensive drilling program would be enabled to start at once in that extensive section of Turner Valley's productive area still waiting to be developed. In addition to this, exploration of Alberta's other fields could also be continued on a very much greater scale.

The section of Canada's air force in the Imperial training scheme, to be active in western Canada, would seem to offer itself as one answer in the near future to the question of an additional market for Alberta's oil. When the scheme is in full swing in the west a very great number of planes will be in continual use, and a tremendous amount of high-test gasoline will be in constant demand as aviation fuel.

To prepare for this new and extensive market, necessary adjustments will, it is presumed, have to be made in Alberta refineries for the purpose of supplying a high-octane gasoline, and new plants may have to be erected. It is of first importance to the industry's welfare that this should be done so that heavy importations of aviation fuel from foreign sources may become unnecessary.

The year 1939 closed with a peak oil production in Alberta, the total being estimated at 7,594,441 bbl. The increase for 1937 over 1936 was 1,476,466 bbl.; for 1938 over 1937, 3,945,131 bbl., and for 1939 over 1938, 852,372 bbl.

At the end of the year 93 wells were producing in the crude-oil zone of Turner Valley, compared with 64 at the end of 1938 and 35 at the end of 1937.

The increase of 68 per cent in the number of wells brought into production, 1939 over 1938, does not of course coincide with the small oil-production increase of approximately ¾ million barrels, which in turn is compared with last year's production increase of nearly 4 million. It is a result, however, which was more or less expected in spite of the fact that the new wells of 1939 were in the aggregate just as good performers as those brought in during the previous year.

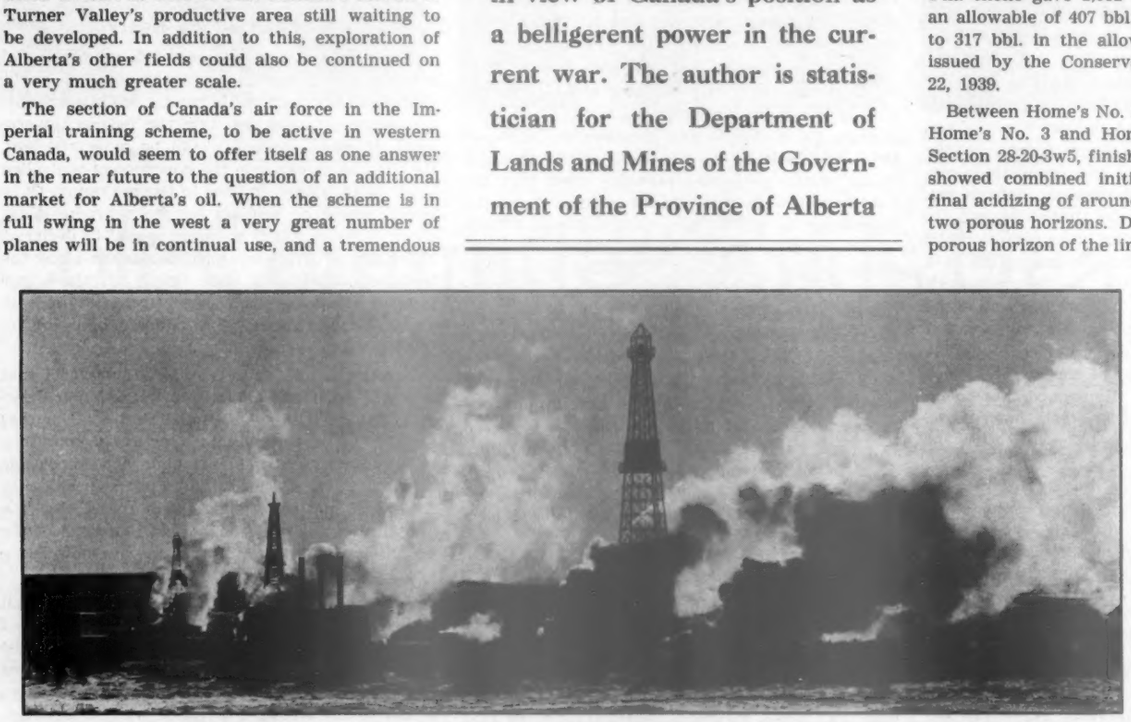
The beginning of 1939—and the end—gave to Alberta the same market which the province had saturated by the close of 1938, and gave also no immediate promise for extension of its boundaries. The result for 1939, therefore, was an obvious one. If there were to be a small increase in production, such increase must depend entirely upon local conditions affecting supply and demand.

In the 1938 review it was stated that the most important event of that year was the bringing into production in December 1938 of Home Millarville's No. 2 well, the largest producer in the valley, at the extreme north end of the field. A year has gone by and it is still the largest producer.

By a somewhat strange coincidence, with the close of 1939, a similar event took place in the same area when Royalite's No. 43, about 2½ miles southeast of Home's No. 2 well, came in towards the end of December and took its place as Turner Valley's second largest producer.

The new well was drilled only to the upper producing zone of the limestone. Without going to the lower, its original production test through a 1-in. choke gave 2,052 bbl. a day and was given an allowable of 407 bbl. a day which was reduced to 317 bbl. in the allowable production schedule issued by the Conservation Board on December 22, 1939.

Between Home's No. 2 and Royalite's No. 43 are Home's No. 3 and Home's No. 4. No. 4, LSD 9, Section 28-20-3w5, finished in the lime at 8,332 ft., showed combined initial flush production after final acidizing of around 2,700 bbl. a day from the two porous horizons. Drill-stem tests of the upper porous horizon of the lime in No. 3 showed 9-bbl. an



Left: Winter drilling scene in Alberta's Turner Valley field. As 1939 ended, there were 93 wells producing in the field

Below: Chart showing Alberta oil production during the past 15 years

COMPLETE REPORT COVERING ALBERTA'S PRODUCING OIL FIELDS

(Prepared by F. K. Beach, Petroleum and Natural Gas Division, Department of Lands and Mines; December 31, 1939)

Field—	Producing wells	Daily av. production (bbl.)	Wells drilling	Producing depths (ft.)	Gravity °A.P.I.	Base	Outlet	Age of field (yrs.)
Turner Valley (40 miles from Calgary):								
Limestone crude	94	*20,000	18	6,800-8,600	39-48, av. 43	Intermediate (wax bearing)	Canadian Prairies	3½
Limestone distillate	†101	175	nil	3,700-6,800	55-73, av. 64	Intermediate (wax bearing)	Canadian Prairies	15
Limestone natural gasoline—above	..	815	nil	3,700-6,800	73	Paraffin	Canadian Prairies	15
Shallow crude	3	20	nil	3,200-3,700	49-50	Intermediate (wax bearing)	Canadian Prairies	25
Red Coulee (Montana border)	7	35	nil	2,500	30	Intermediate	Canadian Prairies	10
Wainwright (150 miles east of Edmonton)	5	30	nil	2,200	18-22	Hybrid	Local	14
Miscellaneous:								
Dina, Saskatchewan border	2	10	1	1,700	14-16	Naphthenic?	Local	4
Lloydminster, Saskatchewan border	2	?	nil	1,750-1,900	14	Naphthenic	Local	New
Vermilion, near Saskatchewan border	1	?	nil	1,850	15	Naphthenic	Local	New
Del Bonita, Montana border	2	75?	nil	5,200	35-37	Intermediate	Local	New
Moose, 30 miles west of Calgary	1	7	nil	1,600	48	Intermediate?	.....	2
Taber, Southeast Alberta	1	‡40	1	3,200	29	Intermediate	.....	1½

*Prorated to this figure (mean annual). †101 wells capable of producing, 83 recently in use. ‡Production suspended.

hour natural flow, compared with 7 bbl. at Home's No. 4, so that a larger producer is looked for.

Turner Valley's productive crude-oil zone is at present known to be about 17 miles in length and approximately 1 mile in width. This area, of course, may become larger. The line curves from the southern end to the northwest, following the general trend of the foothills.

In this zone there are now 97 producing oil wells. About 90 per cent of this number are situated in the south end of the field in an area some 5 miles in length and 1 in width. The remaining 10 per cent, with the exception of two wells in the center of the field, are in the north end, a section which has already produced two of the largest wells in the valley and which is coming more strongly into the production picture all the time.

Last July a test well—the Argus—was drilling in the center of the 17-mile line, and another was drilling 3 miles to the southeast, Anglo 8. Both these wells have now been brought in as commercial producers. Halfway between them a third test in the Arrow is being drilled. Its present depth is around 6,000 ft., in the lower Bentons. The two zones — north from the central Argus well to the richly productive north end, and south from the center to the present main productive zone—offer an immense area still awaiting development. With this development fully carried out, the present confines of the Turner Valley oil area should possess, in numbers of producing oil wells, a total at least double the present one.

Should Equal Iraq's Production

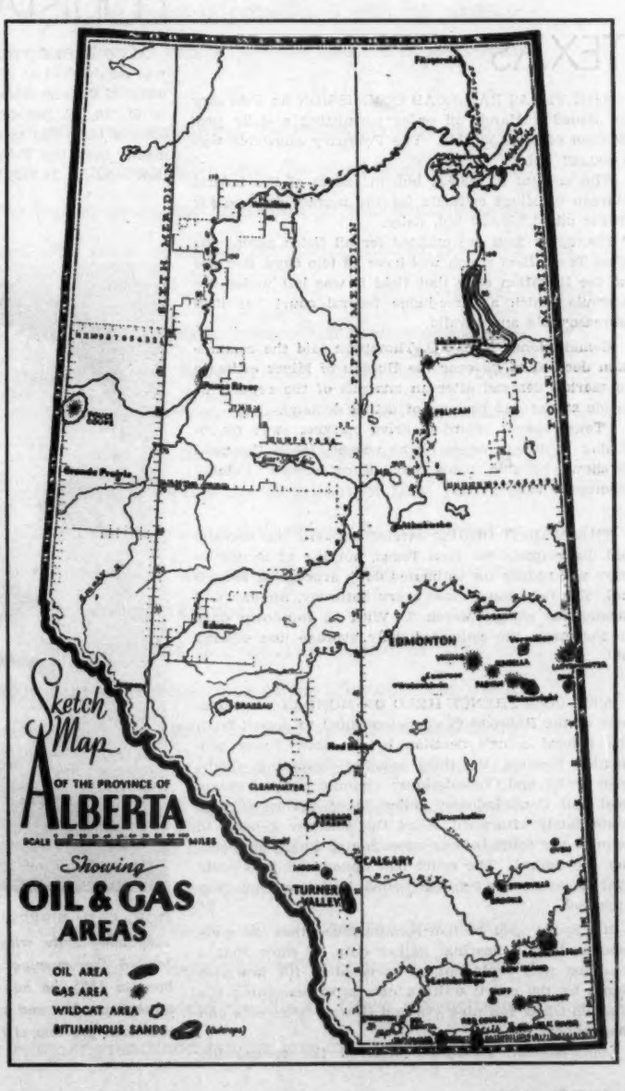
On the completion of such development and with a market sufficiently widened to absorb the valley's entire production—on the more generous conservation basis as outlined by Dr. Brown in his evidence given at the McGillivray Commission, a basis which could be carried out without danger to the field—the Turner Valley productive area should then be able to produce in oil volume a quantity equivalent to the 1939 volume of Iraq, which possesses a 1,200-mile pipe line to the Mediterranean Coast. If the valleys' productive area becomes extended, the situation will, of course, be even more improved, and with the addition of at least one more major field, somewhere in the province, Alberta will have become a definite factor amongst the oil-producing countries of the world.

Exploration was continued through the year in other Alberta fields. The Vermilion-Lloydminster field, in the center of the province on the Alberta-Saskatchewan border, is attracting considerable attention. Oil production is secured in this area from 1,400 to 2,000 ft. from the surface, the average cost of a well with modern equipment being around $20,000 or less—about one-eighth of the cost of a Turner Valley well.

The oil has an average gravity of 15° A.P.I. and has a good base containing a high octane value suitable for aviation gasoline. An analysis of the product from the Wain Town well, now known as Franco-Battleview's No. 2, in the Vermilion area, made by James A. Kelso, director of industrial laboratories of the University of Alberta, shows 3.2 per cent gasoline and naphtha; 4.8 per cent kerosene distillate; 31 per cent gas oil and fuel oil; 15.6 per cent lubricating distillate, and 44.8 per cent residuum, soluble in carbon disulfide to extent of 99.5 per cent.

The Steveville field in the southern part of the province—about 70 miles west of the Saskatchewan border—is continuing as a center of activity. Standard Oil of British Columbia, a subsidiary of Standard of California, is now drilling in the extreme south of this area close to the town of Princess. The test in this location of the field is being watched with considerable interest with a view to possible results leading perhaps to new development in this sector. The Anglo-Canadian wells to the north have been capped as gassers.

Other areas under development during the year, the locations of which are shown on the map accompanying this review, were as follows: Brazeau, Clearwater, Grease Creek, Kootenay dome, Moose dome, Sheppard Creek, Waite Valley, Whiskey Creek, Pouce Coupe, Wainwright, Cardston, Del Bonita, Spring Coulee, and Taber. See map reproduced below.



ALBERTA OIL PRODUCTION

(Quantities in barrels)

Month	1936	1937	1938	1939	Comparisons, 1938-1939
Jan.	105,171	127,977	444,196	515,539	+71,343
Feb.	96,077	140,515	401,587	340,107	—61,480
Mar.	101,857	161,832	467,732	366,898	—100,834
Apr.	94,230	172,608	447,241	543,489	+96,248
May	98,789	175,997	546,719	690,066	+143,347
June	97,639	191,634	521,895	798,170	+276,275
July	122,771	226,000	678,243	877,005	+198,762
Aug.	124,287	271,898	799,023	767,984	—31,039
Sept.	120,210	281,154	867,939	701,209	—166,730
Oct.	120,638	325,723	667,454	796,147	+128,693
Nov.	113,794	326,677	427,236	712,179	+284,943
Dec.	124,979	394,893	472,774	485,618	+12,844
Ttl.	1,320,442	2,796,908	6,742,039	7,594,411	852,372

Increase 1937 over 1936 ..... 1,476,466 bbl.
Increase 1938 over 1937 ..... 3,945,131 bbl.
Increase 1939 over 1938 ..... 852,372 bbl.

*Estimated. (+) Increase. (—) Decrease.

ALBERTA OIL PRODUCTION BY CALENDAR YEARS

Calendar year—	Barrels
1914 to 1924	96,504
1925	168,643
1926	219,598
1927	332,133
1928	489,531
1929	999,152
1930	1,433,844
1931	1,455,195
1932	917,622
1933	1,013,040
1934	1,265,940
1935	1,263,750
1936	1,320,442
1937	2,796,908
1938	6,742,039
1939	7,594,411
Total, 1914 to 1939, inclusive	28,108,752

Note: In reviewing both these production statements the annual totals and the grand total from 1914 to 1939, inclusive, it should be pointed out that such totals represent almost entirely the production from the Turner Valley field. Production from the totals of all other fields represents only one-half of 1 per cent of the figures shown.

STATE CAPITALS...

ARKANSAS

NO CHANGE WAS MADE in the allowable production in Arkansas in March and April. The Oil and Gas Commission placed it at 70,000 bbl. per day, which was also the February allowable figure. The Bureau of Mines estimate of demand was 65,500 bbl. The daily allowable from controlled fields in March and April will be as follows: Atlanta, 900 bbl.; Buckner, 2,679; Dorcheat, 1,500; Magnolia, 18,500; Schuler (Jones sand), 15,000; Schuler (Reynolds lime), 2,800; Village, 1,250.

The petition of the Lion Oil Refining Co. to set aside the February order was not heard. A suit in which Lion will seek to force adoption by the commission of an acre-foot-pound basis for allocating production in the Schuler Jones pool has been set for trial by the Chancery Court in El Dorado on March 4. The company's complaint is expected to be amended to attack the March order as issued after the hearing last week. Production in the Jones pool of the Schuler field has been allocated on the basis of a formula using acre-pounds. It is a gas-drive field.

TEXAS

THE TEXAS RAILROAD COMMISSION on February 24 issued a March oil order permitting a daily production of 1,479,521 bbl. The February allowable was 1,390,151 bbl.

The amount is 148,921 bbl. in excess of the federal Bureau of Mines estimate for the market demand for Texas oil—1,330,600 bbl. daily.

Shutdown days are omitted for all fields except the East Texas field which will have 13 idle days. Because of the litigation over that field it was left under the formula which a three-judge federal court has held unreasonable and invalid.

Commissioner Ernest O. Thompson said the commission decided to go over the Bureau of Mines estimate of market demand after an analysis of the reports of crude stocks and because of actual demand.

"Texas cannot afford to drive markets away by refusing to supply crude oil as needed, when the need is shown by able, ready and willing buyers," Colonel Thompson said.

THE MARCH ORDER carried forward the 690,000-bbl. basic quota for East Texas, but the 13 shutdown days will reduce the estimated daily average to 400,465 bbl. The field must close every Saturday, Sunday and Wednesday except March 2. With 12 shutdown days in February, the estimated daily average was 404,483 bbl.

AT A CONFERENCE HELD ON MONDAY two members of the Railroad Commission voted to appeal from the federal court's decision in the East Texas production formula, the third member dissenting. Chairman Smith and Commissioner Thompson voted to appeal and Commissioner Sadler voted against it, and immediately afterward asked the attorney general to request the court to stay execution of judgment pending the appeal. The court had announced previously that injunctions would be issued if the decision was appealed.

Mr. Sadler said he had recommended that the commission hold a hearing; gather data to show that a pumping well could not be operated at the low rate found by the court; write a new order excepting the Humble Oil & Refining Co. and Rowan & Nichols and then appeal.

Commissioner Thompson believed the commission had an even chance of sustaining its order in the higher courts.

COMMISSIONER SADLER replied to Gov. W. Lee O'Daniel who had refused to convene the legislature to revise the marginal-well law to assure every well a minimum allowable, as had been requested by the commissioner to overcome an effect of the court decision.

Replying to the governor's statement that the commission had sufficient power to cope with the situation, Mr. Sadler said:

"I can't find any place in the statutes where the commission is empowered to correct a defective law. Kansas, Oklahoma and Arkansas all set a minimum per-well allowable, some as high as 25 bbl. daily, and have been upheld by the Supreme Court of the United States. In view of what has been found in other states, it is clearly pointed out that Texas has a defective law, which permits confiscation of property, which the legislature alone can correct."

LOUISIANA

ALLOWABLE PRODUCTION in Louisiana in March was established at 277,412 bbl. per day by the Department of Conservation. North Louisiana's allowable will be 61,336 bbl. per day and coastal, or South Louisiana, 216,076 bbl. The total for the state represents an increase over the February allowable of 4,159 bbl. per day, and is 24,212 bbl. higher than the Bureau of Mines estimate of demand in March which was 253,200 bbl. a day.

Allowable production of the principal fields of the state in March will be as follows: In North Louisiana: Cotton Valley Bodcaw sand, 7,449 bbl.; Holloway sand, 3,500 bbl.; total Cotton Valley, 10,959 bbl.; Lisbon, 6,000 bbl.; Shreveport, 6,377 bbl.; Rodessa, 19,000 bbl.; remaining fields, 19,000 bbl. South Louisiana: Caillou Island, 7,500 bbl.; Charenton, 10,135 bbl.; Eola, 9,692 bbl.; Golden Meadow, 9,520 bbl.; Hackberry, East, 4,950 bbl.; Hackberry, West, 4,150 bbl.; Iberia, 10,040 bbl.; Iowa, 10,345 bbl.; Jennings (Evangeline), 16,575 bbl.; Lafitte, 11,650 bbl.; University, 10,280 bbl.; Villa Platte, 14,154 bbl.; remaining fields, 94,085 bbl.

GOV. E. D. RIVERS, of Georgia, representing an oil-consuming state with hopes of finding production, attended the opening sessions of the Cole committee. Born in 1895, he has served as a city and county attorney, member and speaker of the state assembly, and president pro tem of the senate. He was elected governor in 1937

WIDESPREAD CHANGES in the Louisiana Department of Conservation are expected as a result of the defeat of Earl K. Long as nominee for governor of Louisiana. The governor-designate, Sam Jones, together with other anti-Long candidates, was nominated on the Democratic ticket, equivalent to election in Louisiana, in the state's runoff primary held February 20. The issue of the campaign was a state-wide governmental cleanup and revision of Long policies. The Conservation Department is one of the principal governmental bodies due for a change.

KENTUCKY

KENTUCKY OIL MEN, members of the Kentucky Oil and Gas Association, met in Louisville recently to take action on a bill pending in the state legislature which would regulate oil and gas production in the state. The meeting broke up in a disagreement over Chairman Earl Wallace's count of the vote. Dan Keenan, of Ashland, former president of the association, spoke against the conservation bill and offered a motion that the association go on record as opposed to the pending bill, or "similar legislation." Chairman Wallace, of Lexington, who is also president of the association, counted 31 standing voters against the measure, to which no one objected, but when he counted 31 as favoring the measure there was a storm of protest from objectors who claimed only 25 voted in favor of the bill. The chairman would not change his decision, and there was an immediate "walkout" of protesting members. Earlier in the day the body adopted a resolution opposing the Cole bill, which would provide for regulation of the oil industry nationally. Likewise, the body opposed state Senate Bill 193, which is the administration's labor bill.

CALIFORNIA

THE WIDE DISCREPANCY among major crude-oil buyers as to what constitutes the current market price of crude, and the lack of unanimity among marketers regarding fuel-oil prices, has created widespread comment in Pacific Coast oil circles, especially since the difference of opinion has existed for several weeks without one group or the other revising its position. It is still possible for Standard Oil Co. to rescind its crude-oil cut, as this can be done at any time before the close of February. In this instance, Standard holds the trump card as it is obvious that other marketers cannot and will not attempt to maintain a going price of 15 cents per barrel in fuel oil above Standard's quotations. Four of the major marketers have restored the fuel-oil price which Standard cut on January 1, 1940, but Standard has not made any move to meet the increase in fuel-oil prices or change its lower crude-oil prices.

The restoration of prices for fuel oil is of special interest because some contracts provide that the price to be paid by the consumer shall be that quoted by Standard. Some crude-oil contracts carry the same clause, but no seller of crude would complain if the buyer paid a price in excess of that posted by Standard.

THE OIL INDUSTRIES COMMITTEE of the state legislature by a vote of 3 to 2 reported unfavorably on the Phillips bill which would permit the state to engage in oil and gas development on lands owned by the state. The bill was unfavorably acted on because it was too general.

the OIL AND GAS JOURNAL

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Texas' Key Position

A series of events, most of which have been in the making for some time, again places the Texas Railroad Commission in a key position, not only in relation to the operations in the Lone Star State but in the entire country.

Its action in authorizing an allowable in March substantially greater than the Bureau of Mines' recommendation is unfortunate, and, if continued as a policy over the next several months, is certain to precipitate a crisis which will be national in scope.

Its complaint that in following the Bureau of Mines' recommendations it was losing markets is an excuse which many other areas can present.

By way of comparison, last week the national crude-oil production was approximately 400,000 bbl. greater than in the corresponding week a year ago. Illinois accounted for 260,000 bbl. and Texas for 85,000 bbl. of this increase. Oklahoma, which has lost 200,000 bbl. daily in its markets since the Illinois development got under way in 1937, is producing less than a year ago. Kansas production, despite numerous discoveries over the past 2 years, is under its peak. California is down from a year ago.

The compelling development in this situation has been the vertical increase of Illinois-basin production, which, in effect, last year supplied a large part of the total national increase in demand and apparently will do the same this year.

This is not as it should be, and it has worked a hardship on other states, including Texas. It explains why many areas have seen their demand flatten out, or actually decrease, as was the case in Texas for March.

Right now there does not appear to be any solution of this problem except for the remaining states to continue to contract their operations until the flood of Illinois oil has passed.

An attempt by Texas or any other area to regain markets lost to Illinois, which is located in the center of the consuming territory with low transportation costs, will prove futile and will have unwanted market reactions.

Another development in Texas has to do with the ultimatum issued last week by three federal-court judges in the matter of applying proration in East Texas.

The court again said that proration is not being enforced in East Texas in accordance with the constitutional guarantees of property rights and the conservation statutes of the state.

It declared that unless the commission gives relief through a legal proration plan, the court would have no choice but to grant an injunction to the plaintiff companies, with other operators occupying similar positions certain to seek relief.

Most of the troubles with which the commission is now confronted, not only in East Texas but in other phases of conservation regulations, are of its own making.

The relaxation of legal requirements in regard to well spacing in the early development of East Texas is a primary cause of present difficulties. An interpretation of the marginal-well law at variance with the obvious intent of the statute is another.

Legal observers realized that sooner or later the courts would take cognizance of the inequities regarding property rights, inevitably created by this method of applying conservation regulations. The findings in the original Rowan & Nichols case last June, which have been sustained in the latest suit, gave the legal yardstick with which to measure future conservation regulations.

Further efforts to circumvent these requirements by new regulations or legislation will not avail. The time has come to clear up the muddle of Texas conservation in a manner prescribed by the law and the courts.

Industry's Leadership Criticized At North Texas Oil Meeting

WICHITA FALLS, Tex., Feb. 26.—Leaders in the oil industry, and producers as a whole, were criticized for their lack of business statesmanship and interest in state and national Government by state Sen. Clint Small at the tenth annual banquet of the North Texas Oil and Gas Association held here Saturday night. Senator Small further said the industry had allowed the problems of distribution to go beyond its control and failed to maintain an oil-producing program that would work out equitably. If the industry escapes federal control, he stated, it will be because it cleans house and actually practices conservation.

"Due to lack of business statesmanship in the oil industry," Senator Small said, "operators have failed to work out an equitable producing program and for the same reason had allowed ruthless competition among producers to become so acute as to suggest the need of governmental control. . . . They have allowed problems of production and distribution to get beyond their control and as a consequence have gone to the Government and asked for mediation.

"Oil men are lacking in business judgment when they try to produce too much oil from their own pools. Other people own oil pools the same as you, and if you fail to allow them to produce their share of the nation's demand, somebody, and it may be Mr. Ickes, will protect these unfavorable places and individuals against your lack of foresight."

Wirt Franklin of Ardmore, Okla., second main speaker, said a sure way to assure passage of the Cole bill was opposition without an alternative program. He attacked the bill as superseding the authority of the states and urged a planned opposition with a program of united action. Heretofore, he said, opposition to the bill had been blind; instead of fighting the bill haphazardly the industry should unite to offer alternative plans. Regarding reciprocal trade agreements, he counseled that a fight be made to prevent renewal of the pact with Venezuela, in so far as oil imports were concerned, as these are damaging Texas oil producers.

(Photo and biographical sketch of President Bolin will be found on Page 117).

At conclusion of the banquet which had an attendance of over 600, John F. O'Donohoe, retiring president, was presented a scroll commemorating his services while president. He is succeeded by D. H. Bolin, also of Wichita Falls. Other new officers installed were A. R. Dillard, succeeding J. H. S. Bonner as first vice president; and T. J. Waggoner, Jr., replaced John W. Thomas as second vice president, all of Wichita Falls. D. G. Gray was reelected executive vice president.

New directors who took their place on the 63-man board were: J. E. Allison and E. B. McFarlin, of Tulsa; John E. Farrell, of Fort Worth; Jake Hamon, of Dallas; Oscar Kemp, of Burkburnett; C. W. Cahoon, Jr., George W. Cooper, W. H. Hammon, Bert Ligon, and Louis Sikes of Wichita Falls.

At the noon luncheon, Harry Hines, member of the state Highway Department and candidate for governor of Texas, was the principal speaker, along with state Land Commissioner Bascom Giles.

Stalcup Shows Fundamental Issue in Cole Bill

Speaking before the Tulsa Chamber of Commerce, February 23, on "What the Cole Bill Means to You," Hugh M. Stalcup, vice president, Skelly Oil Co., said:

"The fundamental issue before us all—not just the oil industry—is this: Shall we continue to submit, without so much as raising our voices in vehement protest against further regimentation, to further encroachment of Government upon business, to further blindly, meekly following the left fork of the road that leads inevitably towards totalitarianism, fascism or communism? Shall we sit supinely by and observe the lengthening shadows of planned economic bureaucracy and regimentation blot out private initiative and individual enterprise, and the fundamental principles upon which our Government, our traditions, our civilization were founded, and which we supposedly still hold dear, or shall we say: Enough of alphabetical experimentation, let us return to the good old-fashioned principles of government 'of, by and for the people,' that has made our nation the greatest on earth."

Next Osage Lease Sale Is Set for April 2

The next Osage Indian lease sale will be held at Pawhuska, Okla., April 2, C. L. Ellis, superintendent, has announced. A total of 13,571 acres will be offered, including 78 tracts on the east side and 13 tracts on the west side of Osage County. The Osage sales are the only ones at which Indian leases are sold at public auction, the department recently having ruled that leases of the Five Civilized Tribes be sold by sealed bids submitted at the Muskogee agency.

Canadian Interests Consider Production of Aviation Fuel

TURNER VALLEY, Alta.—Gas & Oil Products, Ltd., is considering erection of equipment at its refinery here for production of high-test aviation gasoline from Turner Valley crude. The plant is now in a position to produce 85-octane gasoline.

DEATHS

GEORGE GALLAGHER, 83, retired oil producer, died suddenly at his home in Bradford, Pa., on February 23.

HARRY THOMPSON, of the McEvoy Co., Houston, Tex., died February 17 after having been in ill health for nearly a year. He started in the oil industry when the Corsicana field was opened in 1898 and he will be remembered by many old timers. He had been with McEvoy Co. for 11 years.

DR. J. W. BEEDE, 68, Tulsa, retired geologist, died February 27.

FERRIER MACKAY, director in Shell Union Corp. and Anglo-Egyptian Oil Co., was found fatally shot at his estate in Scotland.

J. L. SULLIVAN, 58, telegraph operator for Texas Pipe Line Co., died last week in Houston. He had been with the company 25 years.

HARRY SHANNON, 62, Bradford field oil producer, died suddenly at his home in Derrick City, Pa., on Friday, February 23.

THE MARKETS*

CRUDE OIL: Production in the United States continued its upward climb last week to a total of 3,738,043 bbl. an increase of 18,410 bbl. over the previous week's daily average output. Texas was responsible for the increase, as that state produced 34,851 bbl. per day more than in the week before. Illinois production continued upward, but was far below its estimated potential. Some geologists in Illinois are of the opinion that the potential production of the Salem field alone will go to 500,000 bbl. a day before it reaches a peak.

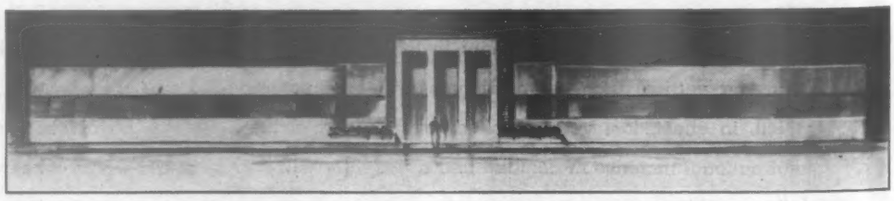
REFINERY: Tightness of fuel oil continues in East, where severe weather still prevails, but signs of slackening appear in other areas. Kerosene firm. Although gasoline exhibits a slightly better tone in some parts of the Middle West, the country's excessive stocks act as a market depressant in most areas. Unwieldy supplies on the Gulf Coast are reported to be clogging outlets of small refiners and weakening quotations.

TANK WAGON AND POSTED DEALER: Standard of Louisiana reduced gasoline prices generally throughout Louisiana and Arkansas 0.5 cent. Irregularity in tank-wagon gasoline prices prevails in much of the Middle West.

FINANCIAL: Pronounced weakness displayed by the oil shares, some issues recording new lows for the year, including those of major companies. Large blocks of Ohio Oil, one of 5,000 shares, changed hands at 6½. Average of 30 representative stocks for week ended February 24: High, 26.56; low, 25.62; close, 25.74. Week ended February 17: High, 26.59; low, 25.96; close, 26.25.

*Detailed information in market section.

GEOPHYSICS AND PRODUCTION LABORATORY FOR CARTER CO.



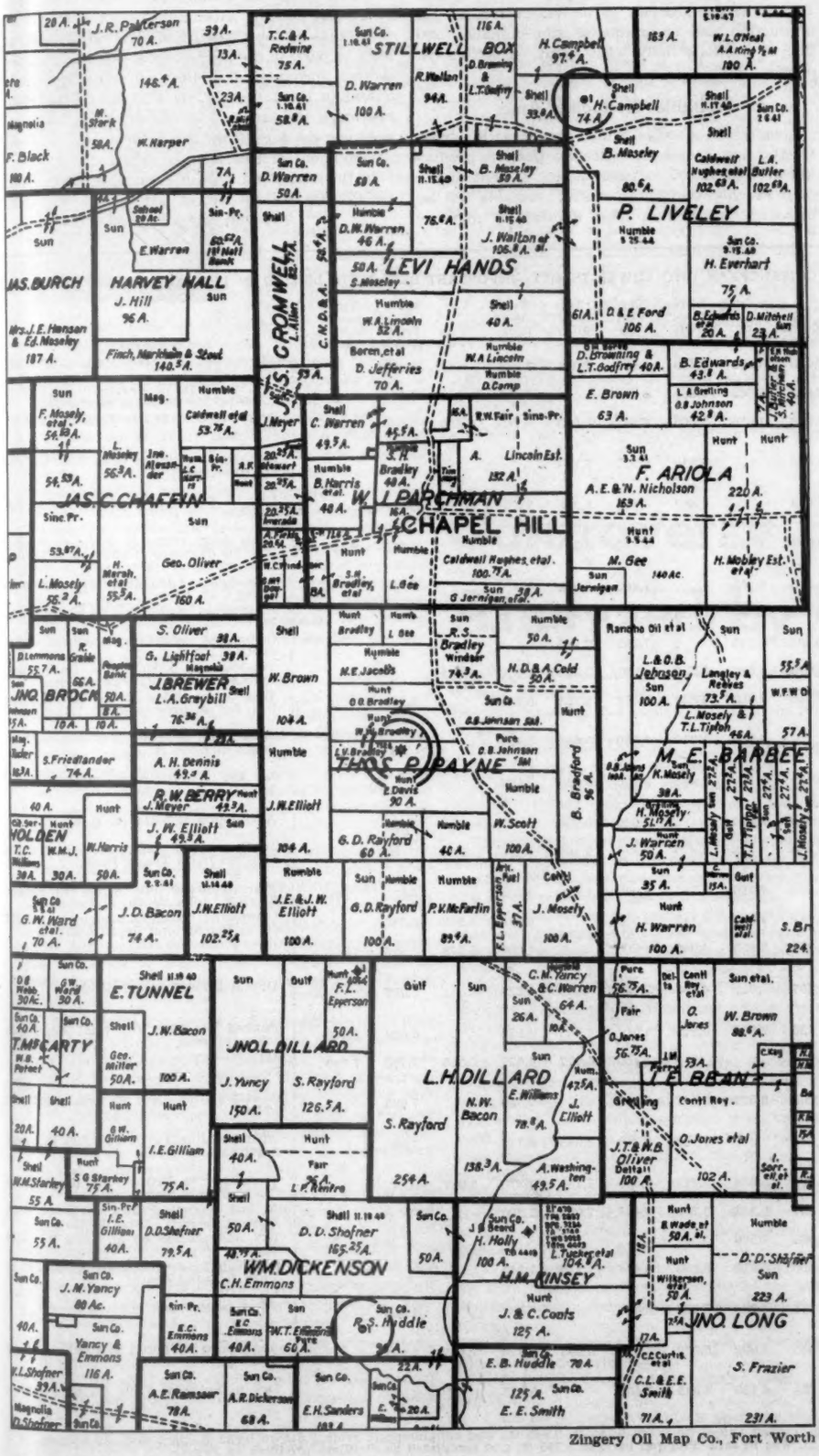
J. J. Conry, president, announces that in the future Carter Oil Co. will design, develop, and manufacture in Tulsa all geophysical apparatus, also production equipment of such a specialized nature that it is not obtainable on the open market, required by the parent Standard Oil Co. (New Jersey), its subsidiaries, and its associated and affiliated companies.

To handle this assignment Mr. Conry says it will be necessary to expand considerably present production and geophysical research facilities, which, while complete units, were originally intended to serve primarily the needs of the local company. Larger, more complete laboratories will be needed for extensive research in the fields of exploration and production theory and practices, to develop improved, more efficient methods and equipment. Shop facilities must be expanded to permit the efficient, rapid, economical manufacture of equipment in sufficient quantities.

To solve these problems, Carter Oil Co. has made plans for erection of a $100,000, one-story, brick and architectural concrete building, 200 ft. by 150 ft., to house modern research laboratories equipped with the latest apparatus, and a large shop with adequate manufacturing facilities at the site of the company's present shop and warehouse in Tulsa.

The Carter company will take advantage of the opportunities for training men for geophysical work afforded by the new plant and research department, and will be able to supply many of the technical men required by the various companies for their field exploration parties.

East Texas Pettit Oil Discovery Result of Long Search



By D. H. STORMONT

FORT WORTH, Tex., Feb. 26.—First oil production from the Pettit zone of the lower Trinity series is assured for the East Texas basin following completion of Shell Oil Co., Inc.'s No. 1 Campbell as a producer in the Chapel Hill area of eastern Smith County. Since 1935, when distillate production was opened in the lower Trinity series in the Cayuga field, East Texas operators have been conducting an intensive exploration campaign for oil production from this geologically deep horizon. While the search led to the discovery of the Talco and Sulphur Bluff fields, producing from the Paluxy formation of upper Trinity, Flag Lake and a few other small Woodbine-sand fields, production opened in the lower Trinity prior to this time has consisted only of gas-distillate.

In the middle of February No. 1 Campbell flowed 255 bbl. of oil daily on a Railroad Commission gage, the flow being through 3/8-in. choke with a gas-oil ratio of 973 to 1. About 1 week later and after studying the results of acid in the Pettit lime of Louisiana fields, the company elected to acidize the section. This action nearly tripled the output, the new gage being 662 bbl. of oil daily.

Oil tested 42° A.P.I. gravity, flowing through perforations at 8,036-58 ft., and at the end of the test after acidizing pressure on tubing was 610 lb. and 480 lb. on casing. Previously casing had been perforated at 8,058-68 ft. with 40 shots and the well made a flow of 126 bbl. in 12 hours through 1/4-in. choke with a gas-oil ratio of 560 to 1. On this gage pressures dropped to 900 lb. on casing and 300 lb. on tubing. No. 1 Campbell was carried to total depth of 8,600 ft. in the Travis Peak topped at 8,247 ft., but no shows of consequence were found in this formation. The discovery is in the northwest corner of the 74-acre tract in the P. Lively Survey.

First in East Texas Basin

Discovery of oil in the Pettit zone at No. 1 Campbell was the first discovered in the East Texas basin, although production is being obtained from this zone in the Shreveport and Lisbon fields of Louisiana. Performance of the Pettit in the two Louisiana fields has not been outstanding, due mainly to close drilling and lack of sufficient reservoir gas. At Chapel Hill it is expected that a well spacing of one to 40 acres will be used, and gas-oil ratios are substantially higher than those of Lisbon and Shreveport.

Four miles south of No. 1 Campbell and on the south flank of the large, deep-seated structure, Sun Oil Co. at last reports was coring below 7,958 ft. at its No. 1 Huddle in the Dickenson Survey. This test is 2 miles south of Hunt Oil Co.'s No. 1 Bradley which opened distillate production in the lower Glen Rose in July 1938. Both the Shell and Sun wells indicated distillate production in the

Map of the Chapel Hill area in Smith County, East Texas, showing Shell Oil Co., Inc.'s No. 1 Campbell which opened Pettit-oil production 2 miles north of the Hunt Oil Co. gas-distillate discovery and the Sun Oil Co.'s No. 1 Huddle which is testing oil possibilities on the south flank of the large structure

Paluxy, the former topping this formation 1 ft. higher than the Hunt discovery and the Sun test 10 ft. higher. Due to the sand section encountered in these two tests "shaling up" in the Hunt producer, no shows were encountered in the Paluxy at that test.

No. 1 Campbell topped the lower Glen Rose pay of No. 1 Bradley 136 ft. lower than that well, cores revealing fair porosity and odor of oil but not of sufficient importance. No. 1 Huddle topped this marker about 45 ft. lower than the Hunt well and about 70 ft. higher than No. 1 Campbell. Core taken from 7,391 to 7,413 ft. showed some 5 ft. of oolitic lime with fair oil stain and porosity. On a 13-minute test at this depth the well made an estimated flow of 500,000 cu. ft. of wet gas. The test resumed drilling and at last reports was coring below 7,958 ft. without encountering any other important shows.

Potentiality of the Chapel Hill structure as an important basal Trinity prospect was first established by No. 1 Bradley upon its completion in the lower Glen Rose in 1938. The discovery was completed at a total depth of 7,528 ft. for an initial potential of 72 bbl. of distillate and 850,000 cu. ft. of gas daily through ¼-in. choke. The distillate producer was high on structure, thus the two tests were drilled on the flanks in an effort to open oil production. Since the discovery is 8 miles west of the East Texas field, any high-pressure gas produced in conjunction with distillate would be in demand for gas lifting in that field. Hunt Oil Co. laid a pipe line to its East Texas field production as an outlet for its gas production and is producing approximately 290 bbl. of distillate daily with about 840,000 cu. ft. of gas.

Probable Producing Area

Geophysical surveys, which served as the basis for the first deep test, indicate a possible producing area of 12,000 to 14,000 acres. Extent of the oil-producing zone, of course, remains to be proven. Approaching lease expirations may require several wells to be drilled in 1940, but depth of production is expected to hold development to a moderate rate. Most of the acreage is leased by major oil companies.

The high-pressure gas discovered at No. 1 Campbell and No. 1 Huddle was the first Paluxy gas discovery in the East Texas basin. Talco and Sulphur Bluff to the north some 65 miles, on the Mexia fault line, are producing from this formation while some 60 miles east gas production is obtained from the Paluxy in the Bethany field of Panola County. Accumulation of this gas on the flanks of the Chapel Hill structure is due, at least in part, to the stratigraphic trap as the sand section encountered in the two flank wells was absent in No. 1 Bradley. Due to East Texas field operators needing an adequate supply of high-pressure gas for lifting and lease operation, some development of this zone is expected.

In the Grapeland area of Houston County, Shell Oil Co., Inc.'s deep test at last reports was drill-

(Continued on Page 39)

TABLE SHOWING GEOLOGIC MARKERS FROM TOP OF COMANCHEAN INTO LOWER TRINITY—IMPORTANT DEEP TESTS DRILLED IN 1939, AND OTHERS SINCE 1936

	Elevation	Top Georgetown	Top Paluxy	Top upper Glen Rose	Top first anhydrite	Top Massive anhydrite	Top lower Glen Rose	Top Pettit	Top Travis Peak	Top lower Marine series	Remarks:
Anderson County:											
Humble Oil & Ref. Co.'s No. 1-C Southern Pine Lumber Co.; Jarvis area	339	5,040	6,082	6,300	7,401	7,615	7,828	....	8,895	....	Abandoned in Travis Peak at 9,157 ft., total depth.
Tide Water-Seaboard's No. 21 Mrs. N. N. Edens; Cayuga field	308	4,523	5,662	5,890	6,827	....	7,203	....	7,991	....	T.D. 9,085 ft. in Travis Peak; P.B. to 7,416 ft. for distillate production.
Tide Water-Seaboard's No. 7 Monnig Brothers; Long Lake field	233	5,904	7,010	7,205	8,343	8,643	8,749	9,590	9,930	....	Abandoned in Travis Peak at 9,971 ft., total depth.
Camp County:											
*H. S. Moss' No. 1 Venters; Leesburg	381	4,550	....	5,930	6,922	7,143	....	....	....	....	Abandoned in lower Glen Rose at 7,608 ft., total depth.
Franklin County:											
Ajo Oil Corp. and others' No. 1 T. J. Sanders; Talco field	371	4,012	....	4,803	5,143	5,248	5,386	....	5,810	....	Dry in Travis Peak at 5,904 ft., total depth.
Gregg County:											
Humble and Gulf's No. 1 E. D. Robertson; Willow Springs	272	3,341	4,541	4,876	5,617	6,214	6,532	....	7,325	9,140	Total depth 10,284 ft. in lower Marine; P.B. for distillate production at 7,910 ft.
Henderson County:											
*Tide Water-Seaboard-Humble's No. 1 Lewis; Opelika field	431	5,255	6,456	....	7,483	8,012	....	....	....	....	Abandoned 8,465 ft., total depth, in lower Glen Rose.
*Tide Water-Seaboard-Humble's No. 1 Scott; Opelika field	538	5,281	6,640	6,650	7,858	8,662	....	....	....	....	Abandoned 8,973 ft., total depth, in lower Glen Rose.
*Tide Water-Seaboard-Humble's No. 1 McGee; Opelika field	424	5,160	6,215	....	7,202	7,745	....	....	....	....	Completed distillate producer, total depth 8,216 ft.
Tide Water-Seaboard-Humble's No. 2 McElreath-Suggett; Opelika field	452	5,070	6,087	6,282	6,991	7,510	8,510	9,073	....	....	Total depth 9,320 ft. in Pettit; P.B. 8,038 ft. for distillate production.
S. Hunt and others' No. 1 Dillard; Flag Lake field	361	3,720	4,689	4,829	5,579	5,729	5,899	....	6,429	....	Total depth 6,518 ft. in Travis Peak; P.B. for oil production in Woodbine.
Hopkins County:											
Walter Goldston and others' No. 10 H. J. Smith; Sulphur Bluff field	439	....	4,500	5,210	5,510	5,600	5,707	....	....	....	Abandoned in lower Glen Rose at total depth of 6,600 ft.
Houston County:											
*Shell Oil Co., Inc.'s No. 1 Dorsey; Grapeland area	393	6,718	....	7,962	9,450	9,650	9,805	....	....	....	At last reports was drilling at 10,790 ft.
Hunt County:											
*Westmount Oil Co.'s No. 1 Clark; Celeste area	677	2,010	2,522	....	3,010	3,330	....	....	3,620	....	Abandoned at 5,314 ft., total depth.
Stanolind Oil & Gas Co.'s No. 1 J. P. Hawks; Campbell area	566	3,730	4,388	4,819	5,335	5,460	5,560	....	5,965	....	Junked and abandoned at total depth of 6,570 ft. in Travis Peak.
Limestone County:											
Pure Oil Co.'s No. 16-T W. B. Kendrick; Mexia field	520	3,365	4,270	4,287	5,000	5,017	5,132	....	5,656	7,676	Top Reynolds lime 8,763 ft.; junked 8,847 ft., total depth, in Reynolds.
*M. Samuell's No. 1 Barron; Groesbeck	448	3,477	4,033	4,145	5,056	....	5,084	5,585	5,713	....	Completed distillate producer at 5,611 ft. in Pettit; total depth 6,051 ft.
Stanolind and Ramsey Petroleum Corp.'s No. 1 T. Norris; Thorton dome	528	3,255	3,955	4,060	4,886	....	4,894	5,375	5,528	7,595	(†)
Navarro County:											
R. L. Wheelock and others' No. 1 I. N. Cerf; Corsicana	435	4,307	....	4,730	5,108	....	5,325	....	5,790	....	Dry at 6,508 ft., total depth.
Panola County:											
Magnolia Petroleum Co.'s No. 2 E. A. Hull; Panola area	222	2,420	2,870	3,975	4,010	4,655	4,875	....	6,024	8,076	Junked at 8,718 ft., total depth, in lower Marine.
Texas Co.'s No. 1-C Adams; Bethany	237	....	....	....	....	4,077	4,637	5,315	5,770	7,790	(‡)
Rains County:											
Humble Oil & Refining Co.'s No. 1 O. L. Easter; Emery area	438	5,003	6,079	6,347	6,975	....	7,585	....	7,665	....	Abandoned at 8,484 ft., total depth, in Pettit.
Rusk County:											
Pure Oil Co.'s No. 1 W. H. Faulkner; Mount Enterprise	563	3,446	....	4,163	5,310	5,945	6,177	....	7,323	....	Abandoned in Pettit at 7,799 ft., total depth.
Smith County:											
*Shell Oil Co., Inc.'s No. 1 Campbell; Chapel Hill	449	4,393	5,534	5,815	6,550	7,135	7,370	8,037	8,247	....	Completed in Pettit; total depth 8,600 ft., in Travis Peak.
*Sun Oil Co.'s No. 1 Huddle; Chapel Hill	449	4,357	5,543	5,781	6,485	7,059	7,300	....	....	....	At last reports drilling in lower Glen Rose at 7,958 ft., total depth.
*Texas Co.'s No. 1 Scritchfield; Bullard area	503	6,060	7,500	....	....	....	....	....	....	....	Dry and abandoned at 8,600 ft., total depth.
Hunt Oil Co.'s No. 1 Bradley; Chapel Hill	400	4,400	5,510	5,755	6,454	7,015	7,245	....	....	....	Completed for distillate producer at 7,528 ft., total depth.
Titus County:											
Magnolia Petroleum Co.'s No. 2 J. A. Chapman; Talco field	329	3,416	4,220	5,028	5,335	....	5,584	....	5,650	....	Total depth 5,663 ft.
Upshur County:											
Hunter-American Liberty Oil Co.'s No. 1 C. Carter; Kelsey dome	428	3,945	4,993	5,339	5,978	6,283	6,826	7,405	7,525	....	Abandoned in Pettit at total depth of 9,538 ft.
Van Zandt County:											
Pure Oil Co.'s No. 1-T V. T. Davis; Van field	488	3,753	4,729	4,945	5,461	....	5,825	....	6,490	....	Dry in Pettit at 7,502 ft., total depth.

*Test drilled in 1939.
†Topped Reynolds lime at 8,525 ft., top of salt 8,995 ft., drilled anhydrite from 9,785 to 9,845 ft., and conglomerate from 9,845 to 9,952 ft. Dry and abandoned.
‡Topped salt at 11,067 ft. and at total depth of 11,303 ft. was in salt. Plugged back to 5,735 ft. and completed as distillate producer in Pettit.

Public Relations Means You, Anderson Tells Marketers

By H. H. ANDERSON
Vice President, Shell Oil Co., Inc., St. Louis, Mo.*

RECENTLY I saw an attractive billboard which read: "If you work, you're in business—what helps business helps you!" It can be said with equal certainty, "If you are in business, you have public relations—whether these public relations help or harm your business depends on you!"

Our customers are a mighty fair-minded lot of people. You and I, for example, are parts of the publics of many other industries. We don't question the fairness of our own reactions to what we hear about the other fellow, do we? No, and by the same yardsticks, if we were to read or hear only unfavorable news about one of them, we would expect our own reactions to be unfavorable. All of us are most sensitive to "bad news" because, unfortunately, that has the greatest news appeal.

Politicians and malcontents have taken advantage of this human frailty and are making it necessary for oil men to unite solidly in a determined campaign to improve our public relations. Subversive interests have laid a barrage of false information about our business. Disintegration, increased taxation, and government control rear their ugly heads on many sides. Our great industry is all to frequently cast in the tragic roles of political football, tax-spenders' "fat cat" and bureau scapegoat.

Perhaps an overpublicized internal strife lays us open to such attacks. If we have some dirty linen to wash, let's wash it; but let's do it in the laundry and not in the front yard. No one has respect for a family that seems continually to fight amongst themselves. Noisy groups amongst us should hush their magnification of the shortcomings of a few, and join the majority in chorus to bespeak the good deeds of the many.

A few unethical or misguided units may bring the whole industry into disrepute. No successful business man is any longer a rugged individualist. Consideration, cooperation and compromise now take precedence. That which affects favorably or unfavorably any one part or branch of our industry will affect us all, small or large. Only through recognition of our partnership in a joint task can we attain lasting good will.

The public's opinion of any industry is the sum of its reactions to the units which make up the industry. Its opinion of any single organization or unit—regardless of its size—is substantially the sum of its reactions to the personnel of all ranks comprising that unit. These public reactions, whether good or bad, are based largely upon the attitudes, actions and utterances of the personnel, for they are the organization in the public eye.

Our publics are our customers, and our employes are the agents through which they are served. Thus good will toward any unit and the industry is created amongst customers only when it is reflected by the employes who serve them. Obviously, therefore, our first steps are (1) to build maximum loyalty amongst employes and (2) to inspire them to boost the business upon which their livelihoods depend.

Employes seek steady work and job advancement. In marketing, these come principally from direct sales effort. Present sales volumes must be sustained if present jobs are to be secure, and increased business usually must be won before job advancement is possible. This is best accomplished when each employe realizes that his own effort as well as that of his fellows will hold, gain or lose business, which in turn will secure, advance or threaten his job.

Of course, employers have an even greater stake in this work—they stand to gain or lose the most. Thus an employer's own interests require him to help his employes to help themselves. This help involves not only training them in salesmanship, service, courtesy, good housekeeping, et cetera, but also keeping them in a healthy attitude of mind toward their jobs, the security of which depends on customer good will.

When employes have this healthy mental attitude, they are readily inspired to sell not only merchandise but also their organization and the industry. No employe will do either wholeheartedly unless he is loyal. Nor can he successfully sell the latter unless he understands and respects them.

Every employe is much concerned about the attitude of his boss and supervisors, and the "atmosphere" of his plant or station, as he is about his wages and privileges. He wants prompt handling of his grievances; due attention to his development; understanding, appreciation and personal counsel. He also wants to help build the business, and expects guidance of this laudable urge.

Inspiring loyal employes to boost the business is relatively easy. They all have that natural trait, curiosity, which is most keen about conditions of which they are a part. They seek more facts about the business and its condition as well as about the industry. And when they understand the inside story of your business economics and of the industry's remarkable achievements in serving the public, they become eager to transmit wholesome facts to those whom they contact, whether on the job or away from it. Their testimony, like that of satisfield customers, is your most valuable advertising medium.

A pleased customer increases his purchases through accessories. He enjoys praising you to his friends, and becomes an unpaid salesman. As your business increases and the profits grow fatter, you are able to reward your employes accordingly. This keeps intact the esprit de corps you have builded, and sitmulates them to even greater efforts and success.

No smart manager climbs to the top on his employes' heads. He assists them, step by step, to mount the ladder of success with him. The one who follows the first tactics will find he stands on a slippery and uncertain footing. But he who shares his success with those who have climbed with him can weather most any storm.

Good will must start with you—good will to your employes; good will to those you supply your products; good will to the industry; good will to your customers. Remember, good will is public relations in its most attractive dress.

*Part of address before Ohio Petroleum Marketers' Association at Columbus, Ohio, February 27, 1940.

Controversy in Illinois Is Analyzed by Geologist

FREDERICK G. CLAPP, internationally known geologist, writes The Oil and Gas Journal his analysis of the arguments for and against regulation in Illinois. He says:

"The premises of those who favor proration, in Illinois or elsewhere, are the following:

"1. Supply and demand must be balanced, either naturally through competitive operations unrestrained, or else artificially by proration laws or agreements.

"2. Since the history of oil development has shown that the first course, at this stage of known and supposed reserves at any rate, results in disaster, the second mentioned course must be our reliance.

"3. Neither human nor business nature seems to have been able to formulate universally operative agreements, and the industry reluctantly falls back on legal restraint.

"4. The matter is not a national issue to the extent where the federal Government need legislate. By far the greater portion of producing and prospective fields are intrastate affairs, and it is for the respective legislatures to enact any necessary control measures.

"5. Certain of the oil-producing states, including those having greatest present production and greatest known reserves, have, after years of experimentation, arrived at a system under which proration, even though not ideal, is operative and achieves a necessary end. If interstate agreements have assisted to this status, so much the better.

"As opposed to the above outlined argument I understand that there is, in Illinois in particular, a great party of oil men and politicians who contend in some such manner as stated below:

"1. Illinois is producing no more oil than is needed for intrastate consumption; consequently the question is Illinois' affair and other states need have no complaints.

"2. Failure to prorate need not have an evil effect in Illinois; therefore why bother?

"3. Legal measures in Illinois might result in oppression.

"4. Illinois will give a chance to operators who have come to the state from outside and wish to produce surplus oil.

"5. Since the matter is a state affair, why should the state enact anything?

"6. Let us produce all the oil possible and help Illinois industry.

"7. We refuse to make any agreement with states which do not agree with us.

"The arguments opposed to proration go on and on, seemingly by mathematical progression, and each argument serves to add fuel to the conflagration that may engulf the American oil industry unless Illinois industry and legislators can see the 'handwriting on the wall.'

"Consequently this is not a technical plea. We engineers who work daily for the greatest good of the industry as a whole can give plenty of technical arguments in favor of proration for Illinois as for other producing states of the country. But what is apparent to the writer must soon become apparent to many others, viz.:

"Seemingly most premises 'beg the question.' They are children of the wish to produce oil without restraint. They lose sight of certain fundamentals that are fully as potent as the law of supply and demand. One of these fundamentals is the fact, obvious to those Mid-Continent operators who suffer from Illinois' folly, that the stated natural wishes of Illinois operators may slowly but surely wreck the entire structure of sane independence that has been erected by efforts of all concerned in the principal producing states over a period of years. The logic of prevalent opinion in Illinois may be ever so correct, yet the underlying fact is that Washington does not think so. You who are opposing the Cole bill or other national-control measure, and who are at the same time producing or abetting the unrestrained production of Illinois oil, are likely to bring down the roof on your own heads.

"Calmly considered, the fact is that certain producing states have by themselves and through interstate cooperation arrived at a fair sort of proration. They prefer their own proration, though far from ideal, to any experiments in proration or other control that may emanate from Washington."

Refinery Expansion

Trustee Appointed for Motor Fuels Corp.

FORT WORTH, Tex.—An order appointing a trustee for the Motor Fuels Corp., which operates a refinery at Levelland, Tex., was entered by federal Judge Wilson. The Motor Fuels Corp. had filed the petition under Chapter 10 of the Bankruptcy Act in order to permit the corporation to work out a plan of reorganization and refinancing.

The petition had been filed in the Lubbock division of the District Court before Judge Davidson, who presided at that city. He, however, transferred the case to Fort Worth because of its central location and due to the fact that the creditors' committee has been functioning here. The petition was presented by Warren Scarborough of Fort Worth, attorney.

Judge Wilson appointed Ira Butler, Fort Worth attorney, as trustee and authorized him to take possession of and operate the refinery under orders and directions of the court.

The judge set the first hearing for the creditors for March 2 before Glenn Smith, referee in bankruptcy. Judge Wilson enjoined all creditors from filing any suits or taking any steps to force any liens against the refinery. He also directed Butler, as trustee, to arrange for the purchase of a sufficient amount of crude to supply the needs of the Levelland refinery, for which cash will be paid.

Western Petroleum Refiners Annual-Meeting Plans

Plans for the twenty-eighth annual meeting of the Western Petroleum Refiners Association to be held at the Allis Hotel, Wichita, Kans., March 31, April 1 and 2, are being completed. Emphasis has been laid on the technical division. Special efforts have been made to obtain papers by outstanding technologists on subjects most vital to the refiners.

Tractors are constantly being improved, which requires the refiners to have available the necessary fuels to meet this demand. Outstanding speakers have been obtained to present a paper on this subject.

On catalytic methods of refining authors have been selected who are well informed on this subject and more information will be had in the discussion. A paper on treating gasolines will be presented.

The technical sessions will be held on Monday morning, April 1, and Tuesday morning, April 2. The general sessions will be held Monday and Tuesday afternoons, April 1 and 2.

Following the general session Tuesday afternoon will come the annual election of officers and directors. Wednesday morning, April 3, an inspection trip will be made to Augusta, Kans., to see the new plant of the Socony-Vacuum Co., White Eagle division.

Ethyl Corp. Conducts Army Tune-Up Clinic

The oil industry's technical achievements have been used to improve the Army's motorized transportation system through a recent use of the Ethyl Gasoline Corp.'s motor tune-up clinic. From serving the oil and automotive industries it was turned, for the time being, into an Army tune-up clinic for the personnel of the Eighth Corps area.

The cooperation of private industry with the Army is of special interest to the petroleum industry since oil companies recently have made improvements in gasolines at a time when the Army is becoming a bigger buyer of fuels due to the national mechanization program in progress.

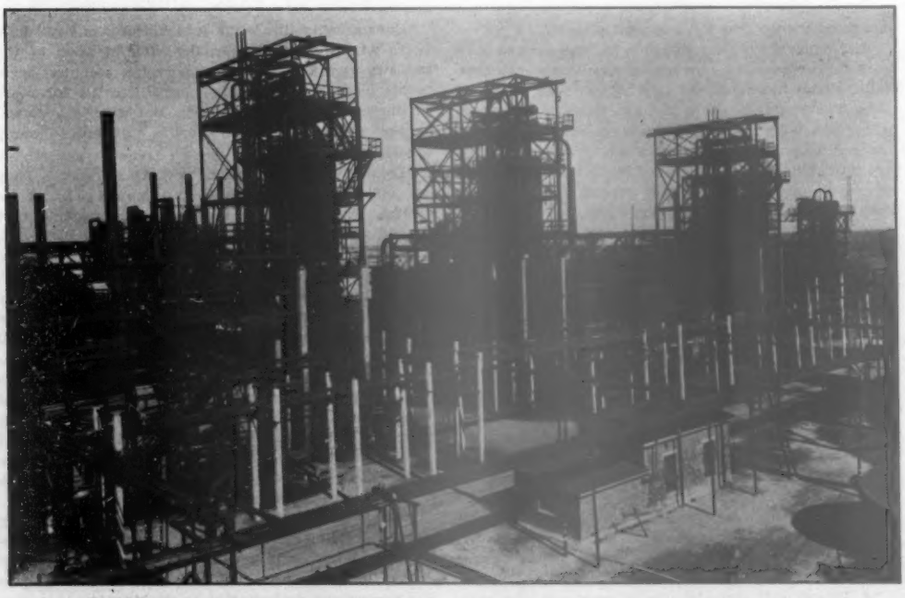
The Army clinic meetings were held recently near San Antonio, Tex., for personnel concerned with motor vehicle maintenance; a second series was conducted for the flying cadets at the "West Point of the Air."

This week Ethyl Gasoline Corp. is conducting a course at Kansas City for engineers on the operation of automotive equipment. This is being attended by engineers from major oil companies in Oklahoma and Kansas. Meetings are scheduled to continue from February 26 to March 1. Plans are being made to give a similar course on the Pacific Coast at a time which will be announced later. Several months from now it is expected that the course will be given at some point in the Southwest.

Sun Operating Stations as Schools for Dealers

PHILADELPHIA, Pa., Feb. 26.—In reply to inquiries concerning a report that Sun Oil Co. is planning to return to the policy of operating its own filling stations, S. B. Eckert, vice president, states that the company to date has taken over approximately 40 stations to be operated as schools for instruction of dealers in the proper operation of integrated stations. While the company may take over a few additional stations as requirements may demand it does not contemplate a return to the policy of generally operating stations itself.

In his annual report President J. Howard Pew, referring to the Houdry development, said: "The new refining plants increased the company's daily refining capacity from 89,000 to 120,000 bbl.; of which 90,000 bbl. is at Marcus Hook, 25,000 bbl. at Toledo, and 5,000 bbl. at Yale, Okla. The new plants in addition to increasing our producing capacity have reduced refining costs, and they were an important factor in effecting the year's increase in earnings. This year we are building at Marcus Hook more catalytic equipment, which will still further reduce our refining costs and further improve our products."



Three tube-and-tank-cracking units in the Sarnia, Ontario, Canada, refinery of Imperial Oil, Ltd.

Natural Gas

Industrial Gas Sales Conference At Toledo, Ohio, March 28-29

The 1940 industrial gas sales conference of the American Gas Association will be held in Toledo, Ohio, March 28-29. Among other papers will be one on "New Developments in Open-Flame Heating and Their Importance to the Gas Industry," by A. M. Thurston, East Ohio Gas Co., Cleveland, Ohio. E. M. Tharp, of the same company, will deliver a luncheon address.

Peoples Natural Denied Proposed Increase

HARRISBURG, Pa.—A proposed $1,300,000 rate increase by Peoples Natural Gas Co. of Pittsburgh was denied by the Public Utility Commission, 1 day before the higher charges were to have taken effect.

The company serves approximately 150,000 domestic consumers in 12 western counties, including Allegheny, Beaver, Butler, Blair, Cambria, Clarion, Fayette, Greene, Indiana, Lawrence, Washington, and Westmoreland.

Lone Star Rate Case In Another Hearing

AUSTIN, Tex.—Proposed reduction of Lone Star Gas Co.'s wholesale rate from 40 to 32 cents per 1,000 cu. ft. was given second hearing in the state Supreme Court last week. The cut, if upheld, would affect more than 200,000 gas-consuming families in 275 Texas cities.

Attorneys for the company contended the decision of the Austin Court of Civil Appeals upholding the reduction conflicted with a ruling in the case made by the Supreme Court of the United States.

Louisiana-Nevada Line Placed in Operation

Louisiana-Nevada Transit Co. began movement of gas from the Cotton Valley field of North Louisiana to Okay, Ark., last week. The line will serve municipal and industrial consumers in the vicinity of Hope. The first runs were made to the cement plant of the Ideal Portland Cement Co. at Okay. In connection with the new line, Arkansas Louisiana Gas Co., of Shreveport, has asked the Circuit Court in Little Rock to set aside a state Utilities Commission order authorizing the Louisiana-Nevada company to distribute gas in the state.

Lone Star Co. Survey For Page Field Line

SAN ANGELO, Tex.—Survey is being made for an 8-in. welded pipe line which Lone Star Gas Co. will lay from the Page field in Schleicher County to San Angelo. Cooper Gas Co., of San Angelo, will supply gas to the West Texas Utilities Co.'s electric-generating and water-pumping plant here under a 10-year contract.

Pipe-Line Activity

Ditching machine moved on trailer designed and built for Williams Brothers, Corp. This is used in construction of Southeastern Pipe Line Co.'s gasoline pipe line in Georgia and Florida

Cosden Pipe Line Changes Name to Mid-Continent

The pipe-line subsidiary of Mid-Continent Petroleum Corp. has changed its name from Cosden Pipe Line Co. to Mid-Continent Pipe Line Co. according to an announcement by Jacob France, president. The purpose was to give unified identity to the operations of Mid-Continent which extend from production through the pipe line and refinery to marketing outlets.

J. A. Beyhan, general superintendent, announces the retirement of S. I. Ford who has served the organization over a long period as superintendent of the northern district. J. M. Linehan has been advanced from superintendent of the southern district to assistant general superintendent of the system.

The Cosden Pipe Line Co. was organized in 1914 during the development of the Cushing field. The system has been expanded and at present it has 1,197 miles of line and seven pump stations which transport crude from the Cushing, Drumright, Burbank, Hominy, Morris, Bartlett, Seminole, Fitts, and Ramsey areas. All oil handled by the system is brought to the Mid-Continent refinery in West Tulsa.

Saskatoon Franchise Asked By Northern Natural

SASKATOON, Sask.—The Saskatchewan Local Government Board reserved its decision on the application of Northern Natural Gas Co. for approval of a tentative franchise to supply natural gas to Saskatoon from the Lloydminster field.

The cost of the proposed 180-mile transmission line to Saskatoon is estimated at $3,519,426 with an additional $1,470,000 for distributing system. There are an estimated 7,110 consumers in Saskatoon and 940 in North Battleford and other towns along the line.

Gas on Alberta Border

In the Alberta border area south of Magrath, Lyons-McIntyre Syndicate's No. 1 McIntyre ranch, LSD 14, Section 19-3-21w4, encountered a small gas flow around 3,800 ft. and is deepening. The flow is being used for camp heating. Test is sponsored by Frank Lyons, an Ohio operator, with Homer Green as superintendent. If commercial gas production is encountered it may be piped to the town of Magrath, 12 miles north.

Natural Gasoline

Arkansas Fuel Starts Runs At New Waskom Plant

MARSHALL, Tex.—Arkansas Fuel Oil Co., Cities Service subsidiary, started operation at its new natural gasoline-absorption plant in the Waskom field, southeast Harrison County, Texas.

The high-pressure-type unit has a capacity of 20,000,000 cu. ft. of gas daily. Company officials expect to get a recovery of 300 gal. per 1,000,000 cu. ft. of gas.

Gas will be taken from the firm's five Trinity-series wet gassers in the area which have established production in the Glen Rose, Pettit and Travis Peak zones. The residue gas will be run into a commercial line.

United Gas Pipe Line Co. Begins Gasoline Plant

United Gas Pipe Line Co., of Shreveport, has begun construction of a $450,000 high-pressure absorption natural-gasoline plant at Koran, North Louisiana. The plant will take gas from the Sligo and Lake Bisteneau fields. It will process 60,000,000 cu. ft. of gas daily to produce 18,000 to 20,000 gal. of natural gasoline and motor fuel daily.

Natural-Gasoline Production Decreased in United States

The daily average production of natural gasoline declined materially in December 1939, according to a report prepared by the Bureau of Mines. The daily average in December was 6,056,000 gal., compared with 6,143,000 gal. in November. The principal decreases occurred in the Panhandle, East Texas, and Louisiana districts.

The preliminary figure for production in 1939 was 2,095,632,000 gal., a decrease of 2.8 per cent from the final 1938 figure of 2,156,574,000 gal.

Stocks continued to decline in December, totaling 185,682,000 gal. on December 31, a decrease of 6,636,000 gal. during the month, and 17,178,000 gal. less than on hand at the end of 1938.

Shipments to jobbers and retailers decreased from 11,130,000 gal. in November 1939 to 9,618,000 gal. in December, while exports reported to the Bureau of Mines increased from 4,074,000 to 4,998,000 gal.

The average vapor pressure for shipments to refineries and jobbers decreased while the averages for refinery-owned bulk plants and exports increased. The weighted average for the month was 21.5 lb., compared with 21.9 lb. in November and 20.6 in December 1938.

PRODUCTION AND STOCKS OF NATURAL GASOLINE

(Thousands of gallons)

	Dec. 1939	Nov. 1939	Jan.-Dec. 1939	Jan.-Dec. 1938	At refineries
East Coast	.....	.....	.....	.....	2,940
Appalachian	8,350	7,603	70,268	68,541	210
Illinois, Michigan, and Kentucky	1,849	1,714	15,264	13,057	3,024
Oklahoma	37,469	36,419	434,797	468,499	1,344
Oklahoma City	8,903	8,641	103,608	141,516	.....
Osage County	4,638	4,395	51,027	55,861	.....
Seminole	10,101	9,757	120,259	122,144	.....
Rest of state	13,827	13,626	159,903	148,978	.....
Kansas	6,095	6,096	59,567	55,988	168
Texas	65,827	65,343	704,707	685,920	6,720
Gulf	11,019	8,491	85,137	65,266	6,006
East Texas	15,097	15,963	188,260	188,117	.....
Panhandle	22,499	24,154	242,020	249,968	.....
North Texas	2,217	2,158	26,473	26,699	.....
West Central	5,384	5,647	64,875	73,446	.....
Rest of state	9,611	8,930	97,942	82,424	.....
Louisiana	8,841	9,144	92,066	95,634	294
Arkansas	1,730	1,710	24,631	25,648	126
Rocky Mountain	7,133	7,391	87,701	82,397	2,604
California	50,446	48,876	606,631	660,590	59,136
Huntington Beach	2,761	2,581	34,049	42,606	.....
Kettleman Hills	11,673	11,611	156,484	186,780	.....
Long Beach	7,308	7,045	86,745	92,675	.....
Santa Fe Springs	4,767	4,666	58,115	62,971	.....
Ventura Avenue	5,590	5,525	61,996	60,642	.....
Rest of state	18,347	17,448	209,242	215,216	.....
Total	187,740	184,296	2,095,632	2,156,574	76,566
Daily average	6,056	6,143	5,741	5,908	.....
Total (thous. of barrels)	4,470	4,388	49,896	51,347	1,823
Daily average	144	146	137	141	.....

RECEIPTS AND DELIVERIES OF NATURAL GASOLINE

(Thousands of gallons)

	Deliveries				Receipts		
	To refineries	To refinery-owned bulk plants	To jobbers and retailers	Exports	At refineries	At refinery-owned bulk plants	By jobbers and retailers
East Coast	.....	.....	.....	.....	2,552	8	52
Appalachian	4,776	313	2,096	626	3,414	313	1,110
Indiana, Illinois, Kentucky, etc.	1,259	.....	505	.....	17,737	2,597	2,822
Oklahoma	28,986	1,273	1,787	545	19,390	35	1,185
Kansas, Missouri, etc.	3,711	.....	445	8	15,741	680	525
Texas inland	49,040	3,171	2,390	81 }	48,429	2,295	1,857
Texas Gulf	16,023	1,248	297	3,150 }			
Louisiana and Arkansas	6,642	287	1,330	.....	4,685	295	1,258
Rocky Mountain	7,220	8	68	.....	5,700	77	109
California	49,629	.....	700	588	49,629	.....	700
Total	167,286	6,300	9,618	4,998	167,286	6,300	9,618
Daily average	5,396	203	310	161	5,396	203	310
Total (thous. of barrels)	3,983	150	229	119	3,983	150	229
Average vapor pressure	22.2	17.2	14.5	16.1	22.2	17.2	14.5

International

Mexico . .

Companies Deny Any Negotiations

INVESTIGATION in New York of the report from Mexico City that an individual settlement was near on the Sinclair properties indicated that this is another trial balloon sent up by the Mexican Government. Since the expropriation in March 1938, President Cardenas has attempted to split the united front of the expropriated companies and negotiate for individual settlements.

Advice in New York was that neither the Sinclair nor the Cities Service officials had any information whatsoever that would confirm the reports from Mexico City.

So far as could be learned there has been no break in the united front of the expropriated companies. They are still insisting upon a blanket settlement on the principle first laid down by Secretary of State Hull that "expropriation must be followed by prompt and adequate payment for the properties involved."

Rumania . .

Warring Powers Increase Pressure

THE complicated net being woven around European and near eastern petroleum supplies became more involved last week. Germany and the Allies jockeyed for position in Rumania which currently is bearing the brunt of the "war of nerves." Both sides are making desperate bids for Rumanian petroleum, although efforts are directed along different lines. The British and French do not need Rumanian oil under prevailing conditions but it is important to prevent as much oil as possible from reaching Germany.

Massing of Allied forces in the Near East and recent actions of Turkey indicate that the Cacausian oil fields of Soviet Russia and those in Iraq, Iran and other near eastern countries, may figure on an equal footing with Rumania in coming events.

Rumania appears to be caught in a trap with Germany insisting on delivery of the full 1940 petroleum quota as contained in the November trade agreement. Allies have brought heavy pressure upon Rumanian commerce through the Mediterranean blockade to the point of receiving an important concession last week when Rumania issued a decree prohibiting exports of aviation petroleum products to Germany.

The position of Rumania involves more than its internal petroleum policy. Soviet Russia sent four tanker loads of petroleum from Batum on the Black Sea to Constanza, the main Rumanian port, where products were discharged into tanks of a German-controlled company, presumably for spring movement to the Reich through the Danube. Russia is said to have 238,000 tons (about 1,785,000 bbl.) of petroleum at Batum earmarked for shipment to Constanza. Rumania has an exportable surplus of petroleum totaling approximately 30,000,000 bbl. annually, consequently the recent receipts from the Soviet are considered beyond question as being consigned eventually for Germany.

Rumania is reported committed to deliver 1,680,000 tons (12,000,000 bbl.) of petroleum to Germany in 1940. Although weather and political conditions made traffic between Rumania and Germany particularly difficult in January, the shipments of petroleum fell far below expectations. Rumania was to have delivered 130,000 tons of oil in January. Actual shipments totaled only 38,000 tons, according to Bucharest dispatches. In view of the disappointing January results and the Allied economic pressure, Germany returned its ace negotiator, Dr. Karl Clodius, to Bucharest. Dr. Clodius is prepared to insist upon Rumania's fulfillment of its commitments.

Latest semiofficial statistics issued by Moniteur du Petrole Rumain show shipments of Rumanian petroleum to Germany during the first 11 months of 1939 totaled 797,663 tons, compared to 635,777 tons for the same period in 1938. Shipments to all countries from January to November 1939 from Rumania totaled 3,765,111 tons, a decline of 9 per cent.

Acuteness of present Rumanian conditions recalled to the minds of oil men the voluntary destruction of that country's oil fields during the World War. Apparently in an effort to stave off a showdown Rumania called 200,000 additional reserves for mobilization last week, increasing its total under arms to 1,600,000.

There is little possibility that Rumania can increase its oil production under present conditions. Most of the properties are in the hands of British, French and United States-controlled oil companies. Threat of involvement in the war is discouraging to further investments.

Bottling up of Rumanian supplies, by whichever side, does not bear the relationship to the United States petroleum industry that a near eastern upheaval would exert. Italy received 599,879 tons of Rumanian oil in the first 11 months of last year, Great Britain 479,014 tons and France 204,494 tons. More recent indications are that Italy is drawing more liberally on sources other than Rumania, which is largely an economic expedient. Rumanian prices have more than doubled since the war started.

Great Britain asked the Rumanian Government last week to limit not only her exports of oil to Germany but also limit the total amount of production. The Allies insist, according to London dispatches, that the two large Rumanian companies controlled by British and French capital (Astra Romana and Creditul Minier, their affiliates and subsidiaries) shall not be required to supply oil for Germany. The Rumanian Government has approximately 650,000 tons annually in participating royalty and domestically controlled companies produce about 350,000 tons which could be requisitioned to meet trade obligations with Germany.

World Refinery Addition

In the world oil-refinery survey published in The Oil and Gas Journal's International Issue, December 28, there should have been included under the heading Scotland, the plant of William Briggs & Sons., East Camperdown Street, Dundee, with H. A. Watson as superintendent, and a capacity of 700 bbl. daily (no cracking).

INTERNATIONAL DELEGATES BUILDING BEGUN . . .

Fred E. Cooper, of Fred E. Cooper Co., president of the Tulsa chapter of Nomads Club, wields a shovel in ground-breaking ceremonies incident to starting construction of the new International Delegates Building on the grounds of the International Petroleum Exposition, Tulsa. At his right stands H. M. Cosgrove, Nomads Club secretary, and at his left is W. G. Green, of Seismograph Service Corp., Nomads Club vice president

Cole Committee Ends Hearings

(Continued from Page 25)

the testimony of E. H. Moore, independent producer of Tulsa, who spoke for the Independent Petroleum Association of America.

"It may be argued," he said, "that there is nothing implicit in the bill that touches wildcatting, but, as is usual with statutes of this character, it will contain a vast reservoir of undefined power and that power would be asserted. . . . There would be scrutinized every wildcat location. It would be examined from a geological standpoint. It would be considered from the standpoint of desirability of unitizing the area of the proposed wildcat."

Such procedure, Mr. Moore argued, would be extremely discouraging to the wildcatters who have made a tremendous contribution to reserves by "going out where everyone else says there isn't any oil and there finding it."

Earlier testimony of government witnesses for the Cole bill not only established no excuse for federal control but substantiated the oil industry's story of progressive technological and engineering advances, the committee was told by John M. Lovejoy, president, Seaboard Oil Co., New York.

"The record contains convincing evidence that wasteful methods practiced years ago have been displaced and that the industry is constantly achieving higher degrees of true conservation," he said. "The historical review of conservation legislation, as presented by Secretary of the Interior Ickes, demonstrates conclusively that the industry, as a whole, and most of the state governments concerned, are alive to the need for conservation, and that appropriate legislation keeps pace with technological progress. No evidence was presented at the November hearings showing waste to a serious or substantial extent, and testimony suggesting that supplies of oil for the Army and Navy might be inadequate may be dismissed as a purely emotional appeal. Projected to any reasonable period in the future, the facts prove conclusively that there need be no apprehension on this score."

There are a number of steps the federal Government can take in the interest of conservation, said Harold B. Fell, Simpson-Fell Oil Co., Ardmore, Okla., and executive vice president, Independent Petroleum Association of America, but adoption of such legislation as the Cole bill is not one of them. "The federal Government can best serve," he declared, "by cooperating in endeavoring to make effective a sound conservation program rather than by endeavoring to control the industry." A tax on petroleum imports equal to the difference in costs of domestic and imported petroleum and its products on the Atlantic seaboard, and the continuance of the Connally hot-oil law, the interstate compact and the Bureau of Mines forecasts are types of federal service which can be counted on to prevent centralization of power within the oil industry and to encourage fair competition and equality of opportunities.

Rep. Phil Ferguson of Oklahoma and Rep. John M. Houston of Kansas presented statements in opsition to the bill. Representative Ferguson told the committee the question is whether the states are doing a good job and whether the federal Government could do better, and declared that no federal agency, at any reasonable cost, would find it possible to handle the conservation problem as efficiently as the states are now doing.

Representative Houston said that Kansas conservation laws are sound in principle and practice and are administered equitably. "A system of cooperation between the state authorities and the industry has been worked out," he declared, "which simplifies problems that might develop into menaces if they were handled by a distant, unsympathetic and uninformed authority in Washington to whom Kansas would be only one item in a long list."

East Texas Pettit Discovery

(Continued from Page 32)

ing below 10,790 ft. in the Pettit lime believed topped at 10,650 ft. with a projected depth of 10,900 ft. This test is the deepest drilled in the East Texas basin and second deepest in the district. The lower Glen Rose was topped at 9,805 ft. and the test may be carried to the Travis Peak. Should No. 1 Dorsey fail to find production at lower depths, it is expected it will be plugged back to 8,541-76 ft. in the first Glen Rose where a good show of oil was obtained when tester was run.

Probable Producing Area

Late in 1939, after a search of many years for Trinity production along the Mexia fault line, gas production was opened in the Pettit oolitic-lime zone near Groesbeck in Limestone County. This discovery was the Murray Samuell and others' No. 1 C. Barron in the McKenzie Survey, and is on a secondary fault zone east of the Mexia fault plane. It was carried to a total depth of 6,051 ft. in the Travis Peak topped at 5,713 ft., but plugged back to 5,642 ft. in the Pettit. Casing was perforated at 5,585-56 ft. and on completion the well rated a potential of 13,700,000 cu. ft. of gas with a water-white distillate production of 85 bbl. daily. Since a probable gas section of more than 100 ft. is encountered, gas production could be increased by extending the perforated section.

To further test potentialities of the new discovery the operator drilled a second well downstructure, ½ mile to the northeast. This well topped the Pettit oolitic zone some 35 ft. lower than the discovery and is being completed for a gas-distillate producer. A second Trinity test on the west side of the Mexia field, Peyton Brothers and others' No. 1-A Harris, at last reports was fishing for drill pipe at 4,994 ft. Lone Star Gas Co. is providing an outlet for No. 1 Barron gas production. However, as in the East Texas field, it is expected that there will be an extensive demand for the high-pressure gas in the Mexia field for gas-lifting purposes.

Other deep tests drilled last year were unsuccessful in opening lower Trinity production. Texas Co. carried its No. 1 Scritchfield, in Smith County, some 15 miles south and west of the Chapel Hill discovery but well down in the East Texas basin, to a total depth of 8,600 ft. This wildcat ran about 2,000 ft. lower on the top of the Paluxy and was abandoned in the Glen Rose without encountering appreciable shows of production. In Camp County, about 35 miles north of Chapel Hill, H. S. Moss took over William C. McGlothlin and others' No. 1 Moss for deepening from 5,750 ft. to the lower Glen Rose. Hole was carried to 7,608 ft., topping the massive anhydrite at 7,143 ft., where it was abandoned in the Glen Rose. However, Moss and associates are moving in rig for a test of the Pettit, hole to be carried to a total depth of possibly 8,100 ft.

At Opelika in northeast Henderson County, where oil production is being obtained from a stray lime between the anhydrite zones in the middle Glen Rose and distillate production from the lower Glen Rose, three deep tests resulted in two dry holes and a distillate producer, Tide Water-Seaboard-Humble oil companies drilled the three 8,000-ft. tests in an effort to further evaluate their holdings in the field. Their No. 1 McGee, which was completed as a distillate producer at 8,216 ft., ran about 200 ft. lower on the top of the massive anhydrite. Their No. 1 Lewis and No. 1 Scott ran some 480 ft. and 1,240 ft. lower, respectively, but were both abandoned in the lower Glen Rose without encountering important oil shows.

In the accompanying table geologic markers, from the top of the Comanchean into the lower Trinity, important deep tests drilled during 1939 and others drilled since the deep exploration campaign was undertaken in 1936 are shown. This shows that only five tests have been carried to the lower Marine series and 20 have been drilled into or below the Travis Peak. A few other tests have been drilled into the Travis Peak, but the more important ones are shown.

Illinois Basin A.P.I. Meeting

(Continued from Page 23)

The speaker then pointed to recent experience in deep-well shooting where high temperatures were encountered and caused volunteer explosion of the shots. In one case, a 9,000-ft. well, two attempts to shoot with solidified nitroglycerin resulted in a premature explosion while liquid nitroglycerin was lowered to bottom and remained more than an hour before it "volunteered." "In view of these and sundry other experiences it cannot be correctly stated that the one explosive is better than the other."

To get the best results from shots, the character of the rock must be known, Mr. Lewis stated. In this regard, he added, the rock which drills the hardest and dulls the bit the quickest will not require the heaviest shooting. Most soft stones, or stones of low compressive strength, are those which are the most elastic or least frangible; conversely, many of the hardest inelastic stones are highly frangible and fracture from a light blow.

Mr. Lewis discussed shot design as a means of getting the widest range of fracture. Loading density increases the value of the shot where the rock is suitable for heavy shooting. Up to 6 qt. per foot, the efficiency increases but beyond that it decreases. Concentrated shots are more valuable in most cases, especially when shooting limestone, thin pay sections or through casing. In small-hole drilling, springing or chambering with a light charge will allow for a concentrated shot, according to the speaker.

In discussing stemming (tamping), Mr. Lewis pointed out the modern method was to use either sand, gravel or cement (both fast setting and gypsum), in combination with liquid stemming and this method had increased the efficiency of the shots. He then discussed cement tamping at considerable length, particularly the heat of hydration caused by setting of the cement and the effect on the setting time of ground waters, agitation, etc. Ample time should be allowed for placing the cement or gypsum-cement tamp as mechanical failure in equipment might result in not getting the stemming in place.

You can sell it

Gasoline stocks are creeping toward the tops of the storage tanks in many refineries, says Keith Fanshier in the Chicago Journal of Commerce, and that is too bad

At the same time, more than one Dubbs refiner is enlarging his capacity to make more Dubbscracked gasoline—what does that mean?

It means that Dubbscracked gasoline goes to market when other kinds go to storage

It means that Dubbscracking is the way to make good gasoline

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

Service on Active Fields

Walnut Bend Field, Cooke County, Texas

Compiled by The Oil and Gas Journal

Approved name

Walnut Bend field.

Geographical location

The field is in northeastern Cooke County in North Texas, about 2 miles east of a bend in the Red River boundary between Texas and Oklahoma.

Principal towns and cities near the field

Gainesville (population about 11,000), county seat of Cooke County, lies 13 miles south and west. Muenster (about 2,000) is 15 miles west of Gainesville. Fort Worth and Dallas are about 70 miles south and Ardmore, Okla., 35 miles north of Gainesville.

Cities and towns where supply companies have branches

Only two supply stores are located in Gainesville, and one in Muenster. Bulk of pipe and heavy materials are shipped from distant points.

Railways serving the area

The main line of the Santa Fe from Dallas to Chicago passes through Gainesville. The main line of the Missouri-Kansas-Texas passes through Whitesboro, east of Gainesville, connecting with a line to Wichita Falls and the Oklahoma Panhandle.

Character of roads

The north-south U. S. Highway 77 and east-west U. S. Highway 82 intersect at Gainesville. The 11-mile road connecting the field to Highway 82 is a graveled, all-weather road. Many lease roads have to be constructed through dense blackjack and scrub-oak thickets, in which case most of the wells are drilled in the center of the road and the derrick skidded.

Trucking companies

One trucking company is located at Gainesville, but much of the trucking is done by Fort Worth and Dallas companies.

Hotels and other accommodations

Limited hotel accommodations are available in Gainesville; also tourist camps.

Schools and churches

Gainesville has several churches and a modern public school system.

Electric power and gas companies

Electric power is supplied by Texas Power & Light Co., while Lone Star Gas Co. supplies gas to most towns. No power lines reach the field.

DEVELOPMENT

Initial development

Discovery well was Sinclair Prairie Oil Co.'s No. 1 J. M. Best, in the northeast corner of Thomas Toby Survey, Abstract 1054, completed June 15, 1938, for an initial potential of 912 bbl. daily in a Strawn sand at 4,887-4,900 ft. Second test, same company's No. 1 Mrs. J. B. Putnam, drilled 1,980 ft. northwest of discovery, failed in the 4,900-ft. pay and was carried to 6,055 ft. to fulfill a drilling contract, penetrating Ordovician sediments below 5,198 ft. It failed to obtain production in the Ordovician and was plugged and abandoned. Sinclair Prairie then completed a south offset in the Best pay for an initial potential of 890 bbl. daily.

Developments to date

Early in 1939 Sinclair Prairie continued routine development, location by location, and completed eight producers before a second operator entered. Cox & Hamon, who had purchased the Neu tracts offsetting the Best tract to the east and south from Texas Co., completed its No. 1 K. Neu as an east offset to Sinclair Prairie's No. 8 Best. No. 8 Best was completed in June at 5,141-73 ft. in a Strawn sand below the Best pay for an initial potential of 215 bbl. Sinclair Prairie, to test the possibilities of Ordovician production in the southern area, carried its No. 10 Best to 5,565 ft., topping the Simpson at 5,230 ft. It made a producer after being plugged back to 5,285 ft., in the Simpson, and was completed for an initial potential of 116 bbl. in 6 hours after acid.

Cox & Hamon completed their east offset (No. 2) in the Simpson at 5,250-96 ft. for an initial potential of 706 bbl. daily. Four other tests were carried to the Simpson; three made producers. (Subsequently three of the six Simpson producers have been plugged back to the Best pay, so that only three wells are producing from the Ordovician member.) Operators then resumed completing wells in the Best pay. Late in December Magnolia Petroleum Co. entered with completion of No. 1 S. L. Ramsey estate. It extended productive limits ½ mile east and opened a slightly higher pay zone, being completed for an initial potential of 1,350 bbl. daily in a Strawn sand at 4,818-42 ft. This brought the fourth operator into the field, Sun Oil Co., which at the first of February completed its No. 1 George Moore for 979 bbl. daily in the 4,900-ft. pay as a south offset to No. 1 Ramsey.

Future development

The field is apparently defined on the north in the 4,900-ft. and Ordovician pays as No. 1 Putnam failed to make a producer. On the west it is believed productive limits are practically delineated as farthest-west wells encountered bottom-hole water in the lower section of the 4,900-ft. pay. Future development is expected to be to the east and south. On the east the 4,900-ft. sand thins slightly with shale streaks appearing; however, the 4,800-ft. pay (in which Magnolia completed its good producer) starts up here and may extend east and there are possibilities of shallower Strawn-sand lenses carrying sufficient saturation to make commercial producers.

Completions to date

On February 24 there were 37 producers in the field:

Operator—	No. wells
Cox & Hamon	14
Magnolia Petroleum Co.	1
Sinclair Prairie Oil Co.	21
Sun Oil Co.	1

Number of operations

On February 24 there were 11 rigs drilling and 7 active locations.

General geology

The field is located well down into the south side of the Marietta syncline between the Red River uplift on the south and the Criner Hills uplift of Love County, Oklahoma. Structure is believed to be due to a minor fold or "pimple." Comparatively little structure is shown in the Strawn, though substantially more is, of course, shown in the underlying Ordovician members, and dip is very slow. Practically no free gas exists in the Best pay, and there appears to be but a weak water drive in the west-side producers.

The Best pay (4,900 ft.) is consistent throughout the field, has an average porosity of about 20 per cent and varies in thickness from about 20 ft. on the south to 50 ft. on the north side. In drilling Walnut Bend wells, some 1,000 ft. of Cretaceous is encountered; the Cisco of Upper Pennsylvanian is missing; about 1,200 ft. of Canyon is drilled with the Strawn section being topped at about 2,200 ft.; some 3,000 ft. of Strawn is drilled with the Simpson limestone, upper member of the Ordovician, being topped at around 5,200 ft.; some 200 ft. of Simpson is encountered with the top of the Ellenburger being placed at about 5,400 ft. Thus the Best pay is well toward the bottom of the Strawn group. The 4,800-ft. and 5,100-ft. Strawn sands are lenticular in nature, so that the lensing of the sand bodies has probably been the controlling factor in the accumulation of oil in those zones, rather than due to structural features.

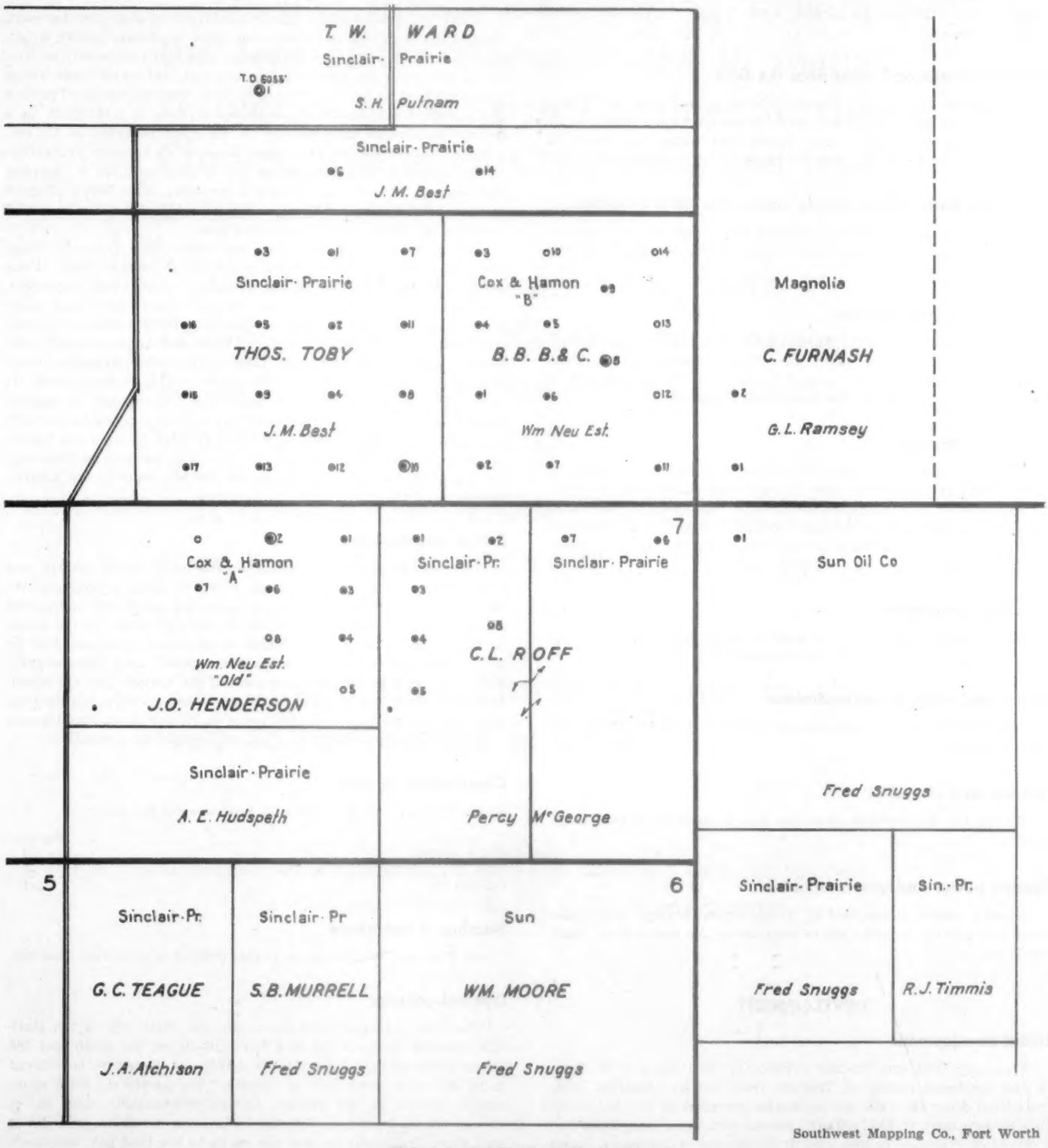
DRILLING CONDITIONS

Derricks

Drilling is done with 122-ft., 24-ft. base derricks. Operators vary in the use of substructures.

Type drilling equipment

All drilling has been done with rotaries powered by gas or diesel engines. Usual diesel-rig layout consists of two 250 to 300-hp. vertical engines driving a conventional draw works, rotary table, and mud pump. On one diesel rig a horizontal 250-hp. diesel is used to drive the rotary and draw works and a like engine to power the mud pump. Usual gas-engine rig consists of two 125-hp. engines to drive the derrick-floor equipment and a 200-300-hp. engine for the mud pump. One rig, however, has three 125-hp. engines in



Southwest Mapping Co., Fort Worth

Walnut Bend field, Cooke County, Texas

compound. Most rigs are equipped with 14-in. power pumps, without a standby unit.

Fuel

Diesel fuel is trucked to the well. Gas is piped from completed wells. Due to the low gas-oil ratio, a few gas rigs were forced to shut down during the recent cold spell.

Speed and cost of drilling

From 25 to 30 days are required to complete wells in the tank. Present contract drilling price is $3 per foot, or about $15,000 per well, excluding pipe and surface equipment. One drilling contractor sets surface pipe in advance of moving in the rotary, and drills in with oil under pressure so that rapid drilling time is made on each well.

Character of mud

Usual practice is to maintain a mud weight of about 9.8 lb. below the conductor pipe to 4,500 ft., and then about 10.2-lb. mud to casing point. Considerable shale is encountered in drilling, but maintenance of proper-weight mud is no problem, though its properties are carefully watched.

Water supply

Drilling water is obtained from a central well drilled by Cox & Hamon to a water sand at about 740 ft.

Size of hole and casing program

Size hole and casing program being most followed is: Set 30 to 60 ft. of 13-in. conductor pipe; an 11-in. hole is carried to below the base of the Trinity sand, where 1,050 to 1,100 ft. of 8⅝-in. casing is set; a 7⅞-in. hole is then carried to the top of the pay, where about 4,900 ft. of 5½-in. oil string is set. Some wells are cased with 9⅝-in. intermediate string and a 7-in. oil string.

Type of bits used

Some operators use rock bits below the conductor pipe to total depth, in which case from 13 to 20 rock bits are required. Due to the large quantity of shale drilled, some wells are drilled using rock bits to dig only about 60 per cent of the hole.

Completion methods

Usually the pipe is cemented on top of the Best sand, and the well drilled in with rotary, using mud as a circulating fluid; or oil is used as the fluid with reverse circulation. Some wells have been cased through the 4,900-ft. pay, including the six carried to the Simpson pay, in which case when they are recompleted in the Best pay gun-perforating is used with about 200 shots. Electrical surveys have been run on all wells before they were completed.

Shooting and acidizing

Only one well has been acidized, the discovery in the Simpson pay, and none has been shot.

PRODUCTION PRACTICE

Method of producing oil

All wells except two are flowing their allowable; of these two, one is on the pump and the other requires agitation.

Separators and tankage

Approximately half of the wells are equipped with individual separators, while the others flow through central units. Central tank batteries are used, low tanks of 500-bbl. capacity being most used.

Water conditions

Wells on the west edge encountered bottom-hole water, lead wool being used mostly to plug back the wells. At this stage of development only a weak water drive is being shown.

Bottom-hole pressure

Original bottom-hole pressure was 2,360 lb. per sq. in., but as is more or less typical of Strawn-sand production, the reservoir pressure has declined comparatively rapidly. Present average pressure for the field is 1,800 to 1,900 lb.

Pumping conditions

Due to the decline in reservoir pressure occasioned by the lack of free gas or an adequate water drive, several of the older wells are expected to be placed on lift in the near future. While the flowing life may be comparatively short, they are expected to have a long pumping life. Due to the depth of the wells individual lifting units will probably be used. During the recent cold weather paraffin accumulation near the surface was so heavy in a few wells that they were killed. After being swabbed to about 300 ft. they were restored to a flowing status, the paraffin being easily removed.

Gas-oil ratios

Highest gas-oil ratio of any well is less than 500 cu. ft. per barrel, with the average for the field around 250 to 300. Little free gas exists in the pay section except that coming out of solution.

GENERAL DATA

Field rules

Rules issued by the Railroad Commission on August 4, 1939, set a 10-acre well spacing, with wells drilled 330 ft. from property lines and 660 ft. apart. A tolerance of nine acres is allowed on producing tracts of more than 10 acres, if the size and shape of the tract warrants, after the tract has been drilled to its ultimate density. Usual exception to the spacing pattern is provided to prevent waste and confiscation. Maximum gas-oil ratio is set at 2,000 cu. ft. per barrel.

Method of proration

The field's allowable is distributed on a 50 per cent acreage and 50 per cent per-well basis. Present basic allowable averages 61 bbl. daily per well.

Pipe-line outlet

The field was without pipe-line outlet until about the middle of 1939 when Sinclair Prairie Pipe Line Co. laid a 4-in. line to its main-line station near Gainesville.

Properties of crude

The crude is of heavy asphaltic base, black in color, high in viscosity, and averages about 35° A.P.I. in gravity. An analysis of the crude produced by the 4,900-ft. wells is as follows:

DATA ON CRUDE

Gravity, °A.P.I.	34.8
Vapor pressure (Reid), lb. per sq. in.	9.0
Sulfur, per cent	.7
Salt, lb. per 1,000 bbl.	112.5
Viscosity at 100° F., S.S.U.	55.0
Bottom sediment and water, per cent	.5

DATA ON PRODUCTS

	Gasoline, 400 e.p.	Kerosene	Light gas oil	Bottoms
Yield, per cent	29.5	12.5	11.5	46.5
Gravity, °A.P.I.	60.1	43.6	37.6	20.6
Sulfur, per cent	.01	.095	.25	1.05
Mercaptans, mg. per 100 cc.	2.0	4.0	....	....
Gum (hot air jet), A.S.T.M.	.8	....	....	....
Octane number (L-3 method)	50.1	....	....	....
Diesel index	....	....	63.1	....
Pour point, °F.	....	....	20.0	....
Viscosity at 210° F., S.S.U.	....	....	....	135.0
Tar test (Italian), per cent	....	....	....	55.0
Viscosity-gravity constant	....	....	....	.855

VACUUM DISTILLATION OF BOTTOMS

(4 mm. Hg.)

Distillate over at 520° F.	33.7
Test on distillate:	
Gravity, °A.P.I.	33.2
Flash (C.O.C.), °F.	300
Fire (C.O.C.), °F.	345
Viscosity at 100° F., S.S.U.	94
Pour point, °F.	60
Bottoms, per cent	66.3
Test on bottoms:	
Gravity, A.P.I.	12.6
Flash (O.C.), °F.	535
Fire (O.C.), °F.	610
Viscosity at 210° F.	1,042
Pour point, °F.	75
Carbon residue, per cent	3.82

PROGRAMS AND MEETINGS

A.P.I. Committee in Charge Of Wichita Meeting

The spring meeting of the Mid-Continent district, American Petroleum Institute Division of Production, will be held on Thursday and Friday, March 14 and 15, in the Allis Hotel, Wichita, Kans. Chairman C. H. Keplinger has named the following committees to handle details:

Program committee.—H. E. Miller, chairman, Lario Oil and Gas Co., Wichita, Kans.; W. B. Berwald, Ohio Oil Co., Tulsa; W. H. Carson, Phillips Petroleum Co., Bartlesville, Okla.; J. S. Freeman, Skelly Oil Co., Tulsa; T. J. Hamilton, Mid-Continent Pump Supply Co., Tulsa; H. O. Harder, Indian Territory Illuminating Oil Co., Oklahoma City; N. M. Hutchinson, Cities Service Oil Co., Bartlesville, Okla.; A. J. Kerr, Pittsburgh Equitable Meter Co., Tulsa; H. V. Mathews, Stanolind Oil & Gas Co., Pampa, Tex.; C. D. Miller, Barnsdall Oil Co., Tulsa; Charles Rodd, Gulf Oil Corp., Chase, Kans.; E. A. Stephenson, petroleum engineering department, University of Kansas; L. H. Thawley, Phillips Petroleum Co., Wichita.

Registration committee.—L. R. Pickrell, chairman, T. C. Johnson, Wichita; H. R. Goodpaster, Keriyn Oil Co., Oklahoma City; T. C. Johnson, T. C. Johnson, Wichita; Frank Leach, Shell Oil Co., Inc., Wichita; E. E. Newport, Sinclair Prairie Oil Co., McPherson, Kans.; E. C. Moncrief, Lauck-Moncrief, Wichita; J. H. Page, Kansas Corporation Commission; Leo Ross, Lario Oil & Gas Co., Wichita; H. N. Waldron, Continental Oil Co., Valley Center, Kans.

Finance committee.—A. S. Ritchie, chairman, McPherson Drilling Co., Wichita; L. A. Babb, Bridgeport Machine Co., Wichita; C. R. Bickel, Shell Oil Co., Inc., Wichita; M. W. Bovaird, Bovaird Supply Co., Tulsa; J. G. Carter, National Supply Co., Wichita; L. J. Davis, Frick-Reid Corp., Hutchinson, Kans.; George P. Dickey, Dickey Oil Co., Wichita; Homer Henderson, Mountain Iron & Supply Co., Wichita; R. H. Lynn, Keriyn Oil Co., Oklahoma City; C. O. Rison, Indian Territory Illuminating Oil Co., Oklahoma City; Ed Robertson, Atlas Supply Co., Wichita; V. E. Sheffer, Continental Supply Co., Wichita; R. Steinhorst, Texas Co., Wichita; O. L. Stevenson, Gulf Oil Corp., Chase, Kans.; D. A. Swenson, Western Iron & Foundry Co., Wichita; J. A. Vickers, Vickers Petroleum Co., Wichita; C. S. Warren, Cities Service Oil Co., Bartlesville.

Entertainment committee.—H. W. Cardwell, chairman, Cardwell Manufacturing Co., Wichita; C. A. Black, Bovaird Supply Co., Wichita; Harland Cardwell, Jr., Cardwell Manufacturing Co., Wichita; C. A. Daniels, Phillips Petroleum Co., Amarillo, Tex.; S. F. Greeley, Lone Star Cement Co., Wichita; George Hoisington, Halliburton Oil Well Cementing Co., Wichita; Walter Kuhn, independent operator, Wichita; M. M. Mahaffey, Cities Service Oil Co., Oil Hill, Kans.; J. F. O'Shaughnessy, Lario Oil & Gas Co., Wichita; Lee Phillips, Phil-Han Oil Co., Wichita; W. H. Reardon, Shell Oil Co., Inc., Wichita; Ernie J. Shaffer, independent operator, Hutchinson, Kans.; E. B. Shawver, independent operator, Wichita; J. A. Vickers, Vickers Petroleum Co., Wichita; H. E. Zoller, Derby Oil Co., Wichita.

Governor Phillips to Speak At Rate Meeting

Gov. Leon C. Phillips will be principal speaker at the state-wide freight-rate meeting to be held in Tulsa under auspices of the Oklahoma Corporation Commission March 6, according to N. R. Patterson, chairman of the local committee.

Missouri Conference on Oil And Gas Development

Dr. H. A. Buehler, head of the Missouri Geological Survey, and Dr. William R. Chedsey, director of the School of Mines and Metallurgy at Rolla, Mo., who attended a meeting of the program committee of the Missouri Mineral Industries Conference, held in the office of John Prince, president of the conference, in Kansas City, announced there will be a meeting of the conference in Rolla on April 26 and 27.

Officials of the survey, the School of Mines and Metallurgy, and the U. S. Bureau of Mines station at Rolla, Mo., will outline their research activities during the past year. On the morning of April 27 there will be a discussion of the oil and gas developments in Missouri and other mineral resources of the state.

On April 26 there will be a joint meeting with the St. Louis section of the American Institute of Mining and Metallurgical Engineers.

Pacific Coast A.P.I. District Spring Meeting Plans

The spring meeting of the Pacific Coast district A.P.I., Division of Production, will be held Tuesday, March 19, in the Biltmore Hotel, Los Angeles. The district committees of the central committee on drilling and production practice plan to hold luncheon meetings between the morning and afternoon sessions.

Program committee: Paul E. Lehr, chairman, Shell Oil Co., Inc., Long Beach; T. A. Atkinson, General Petroleum Corp. of California, Vernon; E. J. Bartosh, Bankline Oil Co., Los Angeles; V. J. Beissinger, Richfield Oil Corp., Los Angeles; D. L. Caldwell, Barnsdall Oil Co., Los Angeles; W. H. Ferrand, Texas Co., Los Angeles; R. W. French, Continental Oil, Los Angeles; Norris Johnston, General Petroleum Corp., Vernon; C. B. Kimberlin, Kettleman North Dome Association, Avenal; R. N. McMaster, Chanslor-Canfield Midway Oil Co., Los Angeles; F. A. Morgan, Richfield Oil Corp., Los Angeles; J. D. Robinson, Union Oil Co., Bakersfield.

National Scouts Convention Changed to Hot Springs

The National Oil Scouts and Land Men's Association has changed the convention city for its annual convention on May 30, 31 and June 1 from Little Rock to Hot Springs, Ark.

MAGNETIC STORM

TUCSON, Ariz., Feb. 26.—A moderate storm began February 24 at 4 p.m. and ended February 26 at 3 a.m. central standard time.

CALENDAR OF EVENTS

March

AMERICAN SOCIETY FOR TESTING MATERIALS, Statler Hotel, Detroit, Mich., March 4-5.

AMERICAN PETROLEUM INSTITUTE, Mid-Continent district, Division of Production, Wichita, Kans., March 14-15.

AMERICAN PETROLEUM INSTITUTE, Pacific Coast district, Los Angeles, Calif., March 19.

AMERICAN PETROLEUM INSTITUTE, Southwestern district, Division of Production, Houston, Tex., March 28-29.

WESTERN PETROLEUM REFINERS ASSOCIATION, annual meeting, Allis Hotel, Wichita, Kans., March 31-April 2.

April

AMERICAN CHEMICAL SOCIETY, Cincinnati, Ohio, April 8-12.

SOCIETY OF EXPLORATION GEOPHYSICISTS annual meeting, Stevens Hotel, Chicago, April 9-11.

AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS, annual meeting, Stevens Hotel, Chicago, April 10-12.

SOCIETY OF ECONOMIC PALEONTOLOGISTS AND MINERALOGISTS, annual meeting, Stevens Hotel, Chicago, April 11.

AMERICAN PETROLEUM INSTITUTE, eastern district, Division of Production, Columbus, Ohio, April 11-12.

SOUTHWESTERN GAS-MEASUREMENT SHORT COURSE, University of Oklahoma, Norman, April 16-18.

NATIONAL PETROLEUM ASSOCIATION, semi-annual meeting, Cleveland Hotel, Cleveland, Ohio, April 18-19.

May

PETROLEUM INDUSTRY ELECTRICAL ASSOCIATION, Dallas, Tex., May 1-3.

NATURAL GAS SECTION, AMERICAN GAS ASSOCIATION, thirty-fifth annual meeting, Houston, Tex., Rice Hotel, May 6-10.

NATURAL GASOLINE ASSOCIATION OF AMERICA, annual convention, Hotel Tulsa, Tulsa, May 15-17.

INTERNATIONAL PETROLEUM EXPOSITION, Tulsa, May 18-25.

AMERICAN PETROLEUM INSTITUTE, midyear meeting, Fort Worth, Tex., May 27-31.

NATIONAL OIL SCOUTS AND LAND MEN'S ASSOCIATION, annual convention, Hot Springs, Ark., May 30-June 1.

June

ILLINOIS-INDIANA PETROLEUM CONFERENCE, eighth annual meeting, Robinson, Ill., June 1.

AMERICAN SOCIETY FOR TESTING MATERIALS, Chalfonte-Haddon Hall, Atlantic City, N. J., June 24-28.

September

NATIONAL PETROLEUM ASSOCIATION, thirty-eighth annual meeting, Hotel Traymore, Atlantic City, N. J., September 18-20.

October

NATIONAL SAFETY CONGRESS, Stevens Hotel, Chicago, October 7-11.

November

AMERICAN PETROLEUM INSTITUTE, twenty-first annual meeting, Stevens Hotel, Chicago, November 11-15.

Many unusual manufacturing procedures have been adopted by the oil industry in the past 3 years. Here is shown an outstanding example. The picture is that of an alkylation unit located on the grounds of a natural-gasoline plant. From this plant 87 to 100-octane aviation gasoline is being shipped and presents the natural-gasoline industry in an entirely new role

ENGINEERING & OPERATING

FEBRUARY 29, 1940

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Paraffin Problems in the East Texas Field

By W. N. LITTLE
Engineer, Tide Water Associated Oil Co., Kilgore, Tex.

A. P. I.

Presented before East Texas Chapter meeting, Kilgore, Tex., February 20.

W. N. LITTLE

PHYSICAL properties of the crude oil in a reservoir, together with variable quantities of paraffin and asphaltic residues, affect the rate of underground flow, and the amount of oil that will be retained in the sand after all customary methods of recovery have been applied. Gas dissolved in an oil in a reservoir decreases the natural viscosity of the oil and allows it to flow more readily to the well bore where the pressure has been reduced by removal of fluid head. When the pressure decreases sufficiently the gas comes out of solution and aids in moving the oil in the direction of the reduced pressure. The loss of vapor from the oil, the cooling effect of the expanding gas, as well as radiation of heat to the cooler upper formations are major factors causing precipitation of paraffin residue from the oil in the tubing, flow lines and stock tanks.

Precipitation of Wax

The reservoir temperature of the East Texas field at 3,300 ft. subsea datum is approximately 145° F. At this temperature considerable wax is in true solution in the oil. When the temperature of the crude oil is lowered to a temperature ranging from 95 to 98° F. while being produced, wax starts to precipitate out of the fluid. According to Lindsly, the crude oil of East Texas has 20.6 per cent by volume of gas in solution with a pressure in excess of 750 lb. per sq. in. However, in all cases, regardless of method of production, the pressure is lower than 750 lb. per sq. in. by the time the oil reaches the surface.

The gas in solution plus some of the lighter fractions of the oil liberate themselves, expanding to aid in lifting the oil, cooling the fluid and reducing the solubility of the wax in the crude. Radiation of heat from the fluid to the cooler upper formations, which are aided by water-sand zones with ability to absorb heat rapidly, as well as the above-mentioned factors, combine to be important reasons why wax often separates from the oil in the tubing. Pressure is a negligible factor in considering the solubility of wax in an oil.

In many wells, the wax precipitated from the oil remains suspended in the fluid and does not cause any deposits in the tubing; however, this wax may settle out in flow lines or stock tanks. Wells operated at a rate sufficient to cause the temperature of the fluid to be above 98° F. when it reaches the surface will not precipitate paraffin in the tubing.

Paraffin Deposits

The substance known as paraffin will vary in character, according to the conditions causing the solidification of the wax in the paraffin, and the length of time it has been deposited. The wax precipitates out of solution in the form of very small crystals, and when deposited, other materials accumulate with it to form what is commonly called paraffin. A sample of East Texas paraffin might contain in per cent by weight, 50 per cent wax, 30 per cent oil, 15 per cent gums, a trace of asphaltic material and the rest sand, silt, and water. The paraffin will vary from a light brown color to a blackish brown; its hardness will depend on the length of time it has been deposited.

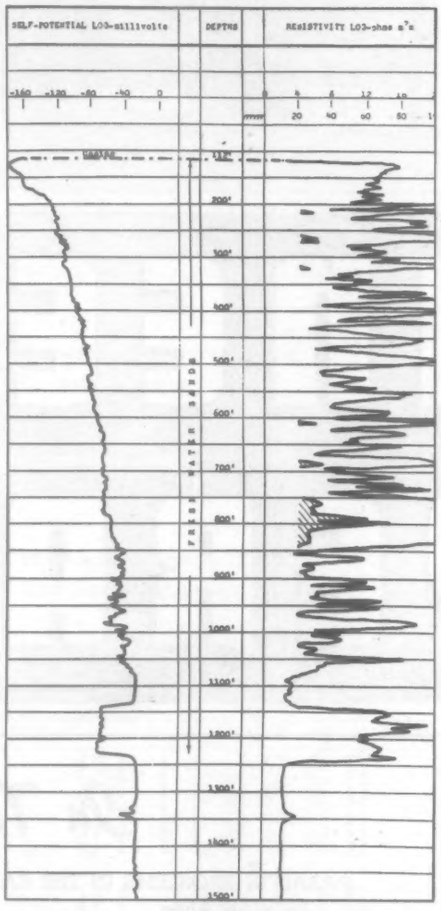


Fig. 1

In the East Texas field, deposits in wells are usually localized at one or more places in the tubing. It is probable that deposition often occurs while the fluid is passing a cooler formation. The considerable number of water sands from the surface to 1,200 ft. are believed to greatly increase the paraffin problem. Fig. 1 shows a typical electrical log of the formation above 1,500 ft. in the East Texas field.

For a long time, deposits of paraffin in pipes have been associated with the static fluid levels in the wells. In most cases, wells that flow, or have high fluid levels, have thicker paraffin deposits at the fluid levels. When a wax-bearing oil stands opposite a formation sufficiently cool to cause precipitation of wax, it is likely that paraffin will solidify on the cool surface of the pipe. The average reservoir temperature of several wells in the East Texas field at 1,600 ft. is 100° F.

Assuming that the temperature of the entire East Texas field is 100° F. at this depth, one might expect less paraffin trouble in wells having static fluid levels below this point. Many wells that caused paraffin trouble years ago are free of deposits at present because of the decline in fluid levels. The height at which the fluid stands in the wells has lowered due to the decrease in bottom-hole pressure.

The type of wells causing trouble with paraffin deposits are listed as follows:

1. Weak wells—those that produce at a low rate.

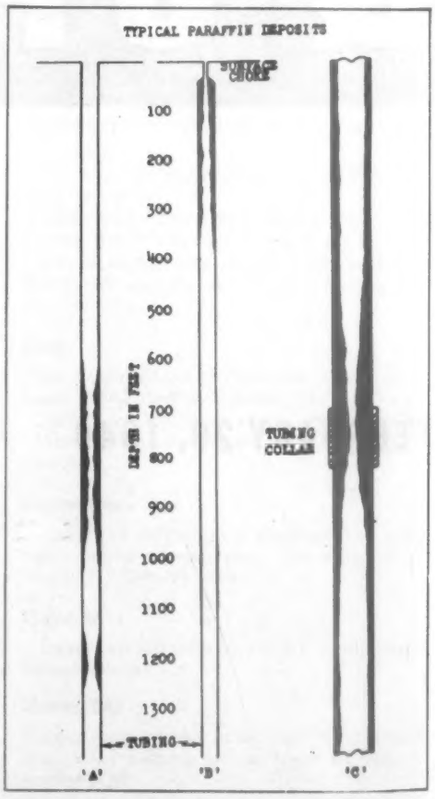


Fig. 2

2. Wells that are flowed through small surface chokes.

3. Wells that are produced intermittently—these wells leave periodic films of wax-bearing oil on the tubing, the oil drains down the pipe leaving the residue to increase in thickness.

4. Wells that flow or pump in heads. (Same as 3).

5. Pumping wells—the motion of the rods liberates an excess of gas and lighter fractions, decreasing the solubility of the wax in the oil, and cooling the oil.

6. Tapered strings—the gas does more work in these wells, as the size of the string increases, causing excessive heat losses.

Fig. 2-*A* illustrates a typical paraffin deposit in a well on the east side of the East Texas field; the paraffin is usually found at depths ranging from 600 ft. to 1,200 ft. from the surface.

Fig. 2-*B* illustrates possible paraffin formation in the tubing of a well produced through a small surface choke, such as many near-west-side wells; this deposit is often found from the surface to 400 ft. below the surface.

Figs. 2-*B* and 2-*C* illustrate the tendency of paraffin deposits to accumulate on the smallest irregularity where the temperature is cool enough to encourage precipitation. Trouble in flow lines is emphasized by numerous and sharp turns, rough pipe and dead ends.

Many references are made in the literature to the use of smaller tubing to transfer a unit part of the fluid to the surface in a shorter time thus keeping the fluid at a higher temperature and increasing the velocity, enabling the producer to minimize paraffin trouble. Observance of the records of many companies seem to disprove this theory. The paraffin trouble seems a little more acute in the smaller strings. A possible explanation would be that heat radiates more rapidly from the center of a small pipe than from the center of a larger one, and that it takes less deposit to cause trouble in a small pipe than in a larger one. Atmospheric temperature will affect deposition in well heads, flow lines, and tank bottoms. When a well produces as much as 20 per cent bottom-hole water, the specific heat of the water being more than twice that of the oil, the well usually ceases to be troubled with paraffin deposits.

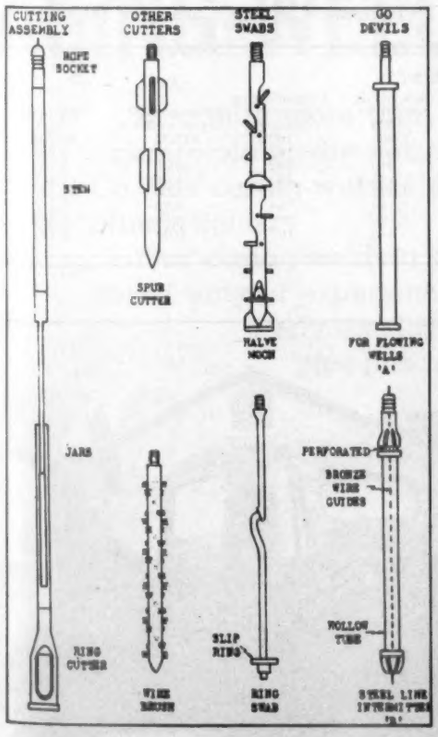


Fig. 3

A study of paraffin problems experienced by many of the operators of the field proved that the northern part of the field has considerable more paraffin trouble than the southern part. Two possible reasons for this difference are:

1. The average fluid level in wells south of Kilgore is lower than those north of Kilgore.

2. In the northern part of the field the gravity of the oil produced will average slightly higher than that produced in the southern part. (The higher gravity oil of the north end could carry more wax in solution in the reservoir, have lighter ends to liberate while being produced, thus precipitating more wax).

Should the water drive of the field maintain the present bottom-hole pressure, it is likely that paraffin problems would stay about the same. With continued pressure decline, some flowing wells will have less paraffin trouble; however, when the wells are pumped, at least some of the wells will have paraffin trouble until bottom-hole salt water percentage exceeds 20 per cent.

In 1939, two companies experiencing considerable paraffin trouble in the field estimated that the deposit was 100 ft. farther down the hole from the surface, indicating possibly a decline in fluid level. One of these companies cleans its troublesome wells on schedule. This company has recently increased the time interval of cleaning some of the wells with small tapered strings from 3 to 4 weeks. The deposit is less troublesome now than it was a year ago on the 3-week schedule.

Helpful Production Practices

Producing flowing wells rapidly, minimizes paraffin troubles. Wells with 2-in. and 2½-in. tubing seldom cause any paraffin trouble if produced at a rate in excess of 20 bbl. per hour. Where free gas is found in the southeastern part of the field it is well to keep the gas-oil ratios as low as possible. In pumping wells, the use of gas anchors theoretically minimizes paraffin trouble; however, no evidence that wells without gas anchors caused more trouble could be found.

Each well offers an individual problem. A slight change in the method of production often will help a troublesome paraffin condition. The first consideration for a well making paraffin is to study the method of production to determine if the precipitation of the deposit can be eliminated. In wells where the deposit cannot be prevented, a chemical, heat, or mechanical method of removal is commonly used.

Go-Devils

For several years some operators have been using "go-devils" or in other words, self-operating tubing scrapers. Two such scrapers are illustrated in Fig. 3. The scraper is usually 1 ft. to 2 ft. long, made with square cutting edges on both ends as illustrated. It is 1 lb. to 5 lb. in weight, and of a diameter slightly less than the diameter of the tubing in which it is used.

A lubricator long enough to hold the scraper is used in placing the scraper in the well. The scraper falls to the bottom of the tubing or to a pinned collar in the fluid below where paraffin is likely to form. When the well is flowed, the scraper rises to the surface with the fluid to remain there until the well is shut in, at which time the scraper falls to its seat again. A spring and oak bumper arrangement is placed in the well head or the lubricator to arrest the shock of the tool when it reaches the surface.

Fig. 3-*B* illustrates a recent modification of the flowing "go-devil" to be used on wire-line intermitters. Since one trip per day is usually sufficient to keep the tubing clean of paraffin, the lubricator arranged for this device has a trigger catch which holds the scraper in the lubricator until the switcher releases it for another trip.

TABLE 1

Name—	Weight/gal. (lb.)	Type	Remarks—
Carbon disulfide	10.50	Wax solvent	Dangerous, inflammable.
Carbon tetrachloride	13.20	Wax solvent	Noninflammable, base of many solvents
Hydrocarbons of oil (gasoline)	5.84	Wax solvent	Often used for diluting heavier solvents.
Sodium hydroxide (20% water solution)	10.16	Wax solvent and heat agent	(Lye) Causes heat with water.

Chemical Treatment

Known solvents of paraffin are listed in Table 1.

Each of the substances listed should be handled carefully, as they will dissolve the fats from one's skin, and with continued contact cause serious skin abrasions. This is especially true of solvents containing sodium hydroxide.

Carbon disulfide is a much better solvent of wax than carbon tetrachloride; however, because of less danger in using, the latter is the most common base of many of the solvents used. Some of the hydrocarbons of oil are fair wax solvents, yet because of their lightness are not very effective. Sodium hydroxide compounds have some solvent power, yet become effective because of the heat they generate when mixed with water. Carbon tetrachloride and carbon disulfide will promote corrosion when used in large quantities. Since a small amount of these substances is generally used, no trouble from corrosion has been observed. Sodium hydroxide is considerably more corrosive than the other chemicals.

1. *Flowing wells.*—Chemical solvents may be used to remove paraffin deposits from the tubing of flowing wells without running a mechanical scraper. In treatments of this kind a lubricator is used to induce the solvent into the tubing, as the well is usually under pressure. The effectiveness of the treatment will depend on getting the solvent in contact with the paraffin deposit. For best treatment one must know the depth of the deposit and the fluid level in the well. Should the fluid level be above the deposit, the use of a solvent somewhat heavier than the oil is believed to be desirable, in East Texas 7 to 9 lb. per gal. When the major deposit is at the fluid level the use of a solvent of the same weight as the oil is preferable; East Texas crude weighs 6.41 lb. per gal. Should the fluid be below the deposit,

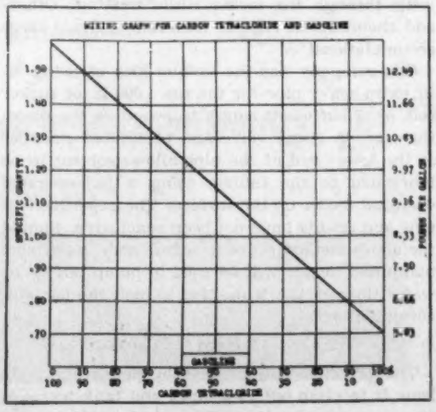


Fig. 4

use the latter weight, and once or twice during the treatment open the well head momentarily to bring the solvent that has drained past the deposit back in contact with the paraffin. Fig. 4 illustrates a practical method of obtaining the portions of carbon tetrachloride and gasoline to secure any desired weight of solvent.

When a well has a very heavy paraffin deposit it has been found advisable to treat in two or three stages. By this means the paraffin which has been loosened in the first stage is removed from the well, allowing the solvent of the next stage to become in more intimate contact with the remaining deposit.

In general most companies have been disappointed in their attempts to clean flowing wells with chemicals. Many of the companies that have accomplished successful jobs have found that it is more economical to scrape flowing wells mechanically.

2. *Pumping wells.*—Solvents have been an effective aid in pumping wells. The ability of the rods to stir the solvent into the deposit makes their use more effective. An example of how one company has used solvents follows:

Well data.

Twenty-eight wells operated by one power on the east side of the field, static fluid level below 1,800 ft., 50 per cent of the wells cause paraffin trouble, flow lines often have considerable paraffin deposit in the first 100 ft. from wells.

Condition of wells prior to treatment.

1. Decrease in production.
2. Sucker rods hanging up, or slow drop.

Procedure.

1. Well is hooked off.
2. Five gallons of solvent is poured into tubing by removing stuffing box.
3. Well is shut in over night.
4. In the morning fluid is pumped to the surface and well is hooked off again.
5. Well is idle 2 to 4 hours.
6. Well is pumped into stock tank.

Cost of treatment, $9.

Remarks.

Nineteen out of twenty such treatments were successful. The paraffin deposit was removed from the tubing; the flow lines were cleaned; and some stock tanks showed evidence of reduced bottoms. In many instances, immediately after the above treatment, rods were pulled for replacement, or check up on condition of pump parts. The average cost of such a pulling job was $18.

Some wells have insufficient gas in the oil to partially empty the tubing when they are shut down. In such wells the chemical can be placed in the tubing through a long piece of copper tubing. Twenty feet of ⅝-in. tubing has been found satisfactory for this work.

Some of the companies prefer to circulate their wells through the casing while treating. Others add chemicals at regular intervals to avoid large accumulations.

One company has the unique idea of using ¾-in. extra-heavy pipe for the top 1,000 ft. of sucker rod, or of sufficient length to penetrate the paraffin zone. A check valve and perforated chamber at the lower end of the pipe allows solvent to be lubricated to the tubing, using a jack-operated chemical feeder on the surface. The experiment is new and results have not been conclusive. Should the above method prove unsatisfactory, a portable pump and heater will be used to pump hot oil or water through the ¾-in. pipe to melt the paraffin accumulations.

Heat

The principle use of heat in combating problems is to clean out flow lines and tank bottoms. One operator says that oil should be 140° F., and water 160° to 165° F., for successful cleaning work. Flow lines on top of the ground get a good cleaning out during the summer months, and for this reason cause less paraffin troubles than do buried lines.

Mechanical Scraping

There are approximately 26,000 producing wells in the East Texas field. Of this number, about 18,000 wells are flowing and 8,000 wells are on artificial lift—either pumping or gas lift. A large percentage of the pumping wells are not troubled with paraffin deposits because of the amount of water produced with the oil. From the above figures one can realize why deposits in flowing wells are more common than in pumping wells. In most instances, deposits are cleaned out of flowing wells with mechanical scrapers. Table 2 lists equipment used by several of the companies in the East Texas field.

Table 3 lists cost data on scraping wells for these same companies.

All the cutters used by the eight companies listed are illustrated in Fig. 3. These companies flow their wells while scraping. Steel swabs which cut while coming out of the hole must be used carefully for usually only a portion of the paraffin can be removed with one swab. These tools definitely remove the deposit from the well. Cutters loosen the paraffin, yet depend on the oil to carry the paraffin out of the tubing. In general, cutters are faster as fewer trips are usually necessary. Some companies use jars on their tools, others prefer to use sufficient weight to carry their tools through the deposit. When using light equipment fewer tools will be lost when jars are used.

Fig. 5 illustrates the small spudding unit used by Company 6. The reel and spudder are both operated by a 4-hp. gasoline engine. The line is 9/64-in. in diameter with five strands of wires.

Company 4 uses a split-cup swab after each scraping job.

Companies 5, 6, and 7 have 200, 116, and 178

Fig. 6

TABLE 2

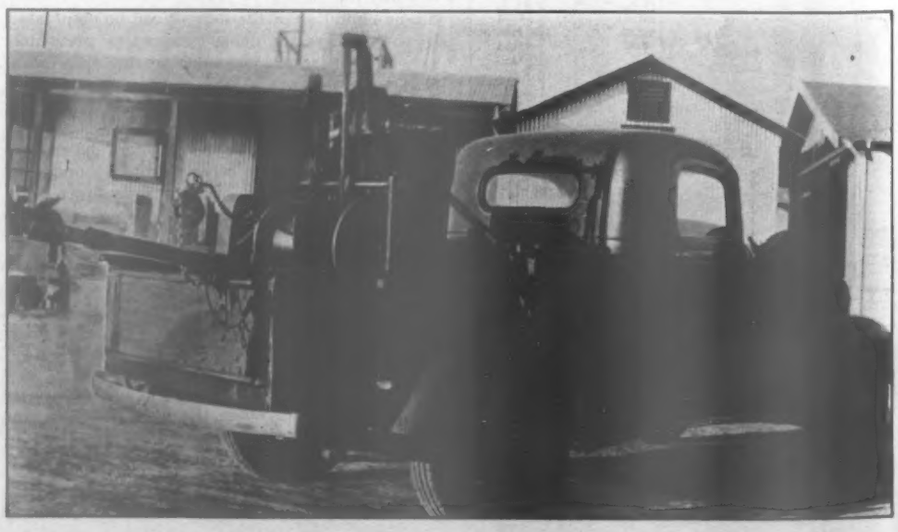
Company	Description of equipment	Purchase cost
1	(1) Heavy-duty winch truck (all purpose)	$5,596
	(2) Heavy-duty winch truck (all purpose)	3,221
	(3) Heavy-duty winch truck (all purpose)	6,392
2	(1) Heavy-duty winch truck (all purpose)	*6,000
	(2) Heavy-duty winch truck (all purpose)	*5,000
3	(1) 3-ton heavy-duty winch truck	....
	(2) 3-ton heavy-duty winch truck	....
	(3) 1½-ton heavy-duty winch truck (paraffin and swabbing)	....
4	Trailer equipped with auto engine and winch (paraffin and swabbing)	....
5	1½-ton truck, light winch, ⅝-in. cable (swabbing). On same truck, small wire-line equipment (paraffin)	2,534
6	½-ton truck, small individual motor spudding unit (paraffin)	1,550
7	½-ton pickup, small wire-line equipment (paraffin)	1,000
8	½-ton pickup, small wire-line equipment (paraffin)	970

*Estimated.

TABLE 3

Company	Type equipment	No. wells scraped 1939	Average time per well (minutes)	Average cost per well	Total cost 1939
1	Heavy, all purpose	267	160	$12.35	$3,298
2	Heavy, all purpose	137	165	16.05	2,204
3	Heavy, all purpose	345	240	23.50	8,107
4	Medium, swabbing and paraffin	145	190	11.98	1,737
5	Medium, swabbing and paraffin	1,272	66	3.50	4,452
6	Light spudder, paraffin	1,140	84	4.75	5,415
7	Light, paraffin	1,106	100	3.50	3,859
8	Light, paraffin	379	165	6.08	2,304

Fig 5



H. C. Price crew welding casing on a well near Effingham, Illinois

One of the H. C. Price Company's fleet of trucks especially equipped for casing welding

801 ILLINOIS WELLS CASING-WELDED BY H. C. PRICE CO.

In a little more than 18 months, the casing-welding division of the H. C. Price Co. has casing-welded 801 wells in the Illinois fields.

Our casing-welding crews are composed only of experienced welders formerly employed by us in our pipe line welding division.

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strings of small tapered tubing, respectively. This partially accounts for the greater number of scraping jobs these companies do. These three companies clean their wells on regular schedule. Companies 5 and 7 scrape many of their small tapered-string wells as often as every 3 or 4 weeks. The timing of the scraping work is the result of records kept on each scraping job. For efficient use of light equipment, wells should be cleaned before the deposit becomes heavy.

When heavy lines and tools are used, such as in the practice with all-purpose units, it is necessary to string the line over the crown block of the derrick. For wells without derricks, portable masts are used. Company 1 contracted 26 cleaning jobs for wells without derricks in 1939. The average cost of these jobs were $24 each, or a total of $624. This same company has a light truck with small steel-line equipment which is used for the bottom-hole-pressure work during a portion of each month. This equipment could have handled the above cleaning work.

The total utility of the unit used by Company 5 is shown in Table 4.

TABLE 4

Work—	No. jobs	Hours
Paraffin	1,272	1,394
Swabbing	48	89
Fishing	6	23
Measuring	24	36
Shooting	1	6
Total	1,351	1,548

A power takeoff from the truck engine drives the reel holding the ⅜-in. cable. A cathead operated from the power takeoff is used to drive the small steel-line equipment for paraffin cleaning, measuring and shooting work. All of the work listed is handled by a two-man crew. One heavy-duty winch truck, which is available, is not burdened with any of the work listed in the table. This arrangement of equipment is very flexible and requires a minimum investment.

A breakdown of costs for Company 5 on cleaning paraffin in 1939 is shown in Table 5.

TABLE 5

Method—	No. job	Minutes per job	Cost per job	Total cost
Conventional	112	171	$17.00	$1,904
New	25	120	12.00	300
Average	137	165	$16.05	$2,204

"Conventional" in Table 5 refers to the use of a long lubricator and tubing board. Fig. 6 illustrates the equipment used in the new method. The stem is a 1-in. pipe filled with lead. The lubricator is only long enough to hold a 2 or 3-ft. scraping tool or swab. A 1-in. stuffing box and an oil saver are used to lubricate tools into the well. These 1-in. stuffing boxes sell for $12; two and one-half jobs will pay for the new equipment. Some companies are using pipe filled with mercury for stems above the tools. This will also enable the shortening of the conventional 30-ft. lubricator.

Companies 1, 2, 3 and 4 ordinarily clean wells only when the wells die or the production has almost ceased, therefore have fewer scraping jobs. It is possible that the wells causing trouble could be cleaned more often with less operating expense. It is probable that this could be accomplished with a considerably smaller investment.

Pumping wells are often cleaned with mechanical scrapers after pulling the rods out of the tubing. Scrapers are often run on the rods, rather than on a string of tools. Company 4 is the only company listed which installs rods scrapers on all their pumping wells. One scraper is usually located above the pump, and several others in the paraffin zone. These scrapers clean the tubing while pulling the rods, yet occasionally the deposit becomes so heavy that a stripping job is necessary to remove the rods. On one occasion Company 4 stretched a string of rods pulling them through a heavy deposit necessitating the replacement of the rods. When rods are pulled at reasonable intervals of time the rod scrapers are very satisfactory.

Conclusion

Some paraffin problems can be decreased by changing production practices. It is known that low rates of production encourage paraffin deposits; however, it is beyond the scope of this paper to determine the advisability of this practice. Many of the operators of the East Texas field fear the possibility of local water coning more than paraffin accumulation.

Wells that have a high flowing pressure generally operate flowing "go-devils" very satisfactorily.

Companies operating only a few wells in the field generally prefer to use chemicals to clean paraffin deposits from troublesome wells. There is less investment necessary for proper chemical treatment than for equipment needed for mechanical scraping.

When one all-purpose unit will handle all the service work of a company, elimination of the use of tubing board and long lubricator should result in a saving. It must be remembered, however, that the use of double-stuffing-box arrangement necessitates the use of a heavy stem in high-pressure wells.

The old axiom, "An ounce of prevention is worth a pound of cure," is believed to apply in removing paraffin deposits. It has proven advantageous to schedule cleaning work so as to clean the deposits from the wells before the paraffin becomes thick and hard. Light equipment can perform this work very rapidly. It is not necessary to have a derrick on the location when light equipment is used for the scraping work. The lubricator used with light equipment is usually 6 or 8 ft. long, and has a combination pulley, swivel, and oil saver on top. Companies using light equipment for paraffin-scraping work find that fewer heavier all-purpose units are needed to take care of the heavy-duty work.

Acknowledgments

Special acknowledgment is made to the Tide Water Associated Oil Co. for permission to prepare and present this paper.

The manuscript was reviewed by George L. Nye, E. B. Miller, Jr., and J. E. Springer, of the Tide Water Associated Oil Co., and W. S. Morris, of the East Texas Engineering Association, whose many helpful suggestions are sincerely appreciated.

The assistance of many engineers and other production men, who generously furnished data and opinions incorporated in the paper, is gratefully acknowledged.

Clark Johnston and Frank Lana, of Delta Drilling Co., furnished data on the experiment with hollow sucker rods.

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Numerous references were made to the following literature:

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SAFETY — Shield Protects Men Operating Valves

EVERY time a new well, or an old well with a high gas pressure, is opened there is danger of its getting out of control, showering the countryside with oil and rocks and perhaps catching on fire. That there are not more wild wells and more accidents in the handling of high-pressure wells is due to the care in selecting and installing equipment and anticipation of the emergencies which might arise.

The shed pictured here is of simple construction but it serves a very worthy purpose as it protects the roustabouts from being burned in case the well catches on fire. Rocks thrown high in the air can deliver a fatal blow to a roustabout trying to close a valve if there is no overhead protection. High-pressure wells, such as this one, have robbed workmen of their hearing by the loud roar of the gas. With the shed in front of them the vibrations are dampened and ear drums are relieved of some punishment.

The opening of a well is often a tedious process as extreme care must be taken that everything is in order. On some wells, this has taken days and the efficiency of the workmen is lowered if they must stand in the broiling sun while waiting for the order, "Crack it a little more." A great many operators use large wheels on the end of the valve extensions but in this case they were not installed as they would be in the way if workmen wanted to leave in a hurry. A safety practice which is generally followed by most production crews is shown in the position of the chain tongs, ready to close the well.

The well head is equipped with three high-pressure gate valves on the long string of casing and a gate valve on the surface pipe. The latter cannot be closed unless the christmas tree has been destroyed as the long string of casing is inside of it; it is there in case this unlikely possibility did occur. The three valves on the long string give assurance that men will keep control of the well. The lower one is kept open all of the time, the pressure being held by the two upper valves. At the first sign of cutting of the upper valves, the lower one can be closed and the upper ones repaired or replaced.

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(3) The chart record is an honest, undistorted story of the control secured,—below, at and above the control point.

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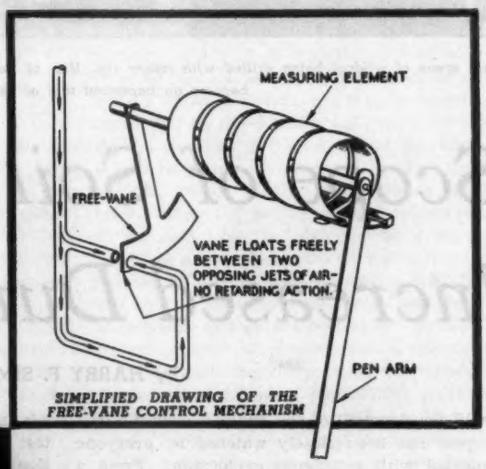
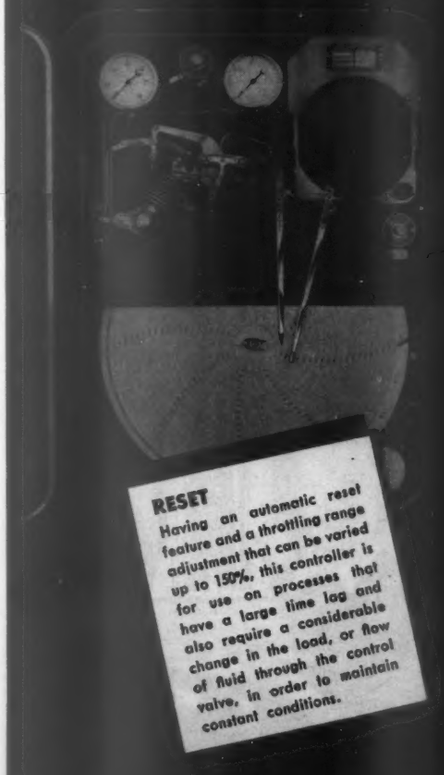


SIMPLIFIED DRAWING OF THE FREE-VANE CONTROL MECHANISM


RESET
Having an automatic reset feature and a throttling range adjustment that can be varied up to 150%, this controller is for use on processes that have a large time lag and also require a considerable change in the load, or flow of fluid through the control valve, in order to maintain constant conditions.
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Night scene of wildcat being drilled with rotary rig. Use of soil analysis in predicting outcome of tests has become an important tool of petroleum industry

Scope of Soil Analysis Increased During Year

By HARRY F. SIMONS

THE development of soil analysis over the past year has been closely watched by everyone connected with petroleum exploration. From a review of its progress, the least that can be said is that nothing has been revealed to seriously discredit the method as a valuable exploration tool, and marked strides have been made in its development.

Of particular interest is the fact that no less than 10 (perhaps more) research laboratories have been active in their efforts to prove or disprove the scientific soundness of the method. In all but two known cases, results of these preliminary studies were sufficiently impressive to cause an extension of the research to field applications for a final evaluation of its merits. It is estimated that something in the neighborhood of $250,000 was spent in research on all phases of chemical prospecting during 1939.

The other phase of development during 1939 was the fact that commercial soil-analysis companies did a great deal of work during that year, and the results following the drill were satisfactory, on the average. It is estimated that about 300 surveys, both large and small, were made during this period.

In the January 25, 1940, issue of The Oil and Gas Journal, newly discovered reserves for the year 1939 were reviewed. The aggregate new reserves added were estimated at 486,894,000 bbl. Of this amount, discoveries accounting for 61,685,000 bbl. (about 13 per cent) were recommended by soil analysis prior to drilling. It is not meant to infer that the discovery wells resulting in this new reserve were drilled solely on soil analysis, because this was not the case. It can only be said that soil analysis was used on these prospects prior to drilling and recommended the areas for exploration. In each case the same areas were checked by other geophysical methods, and in only one case is it known that the test wells were drilled entirely on recommendation of soil analysis. It is of course true that there was in almost every case an overlapping of geophysical or geological effort on each wildcat drilled.

It is also significant to review the results of negative predictions by soil analysis over the same year. Because much of the soil work done was in the form of experimentation for the purpose of building up empirical field data, many wells were drilled in 1940 which were condemned by the new method. In other words, soil analysis findings were disregarded and wells drilled anyway. Over 30 instances of this kind are known, and in most cases the prospects were considered to be favorable structurally as mapped by other instruments. After drilling, a good portion of these prospects proved to be structurally high, but lacked sands carrying commercial oil deposits. Others exhibited no structural promise and were dry. With only one partial exception, all the negative predictions of soil analysis proved to be correct.

In this one exception, a deep test in North Texas was drilled on a structure which had produced several years from shallow formation and had been depleted. A deep-sand field was discovered here, where soil-analysis showings were confusing and not conclusive. Of course, it is recognized that little credit is due any exploration method for predicting dry holes on wildcat prospects, but the soil-analysis record in this respect over these 30 prospects is interesting. First, it suggests a reliable method to check structures for oil content prior to drilling. Second, perhaps future results may prove the chemical method to be a negative tool, and if costs can be kept down, a reliable, quick and economical reconnaissance method will be available.

During this same period the failures on prospects recommend by soil analyses approximately equaled the discoveries. Theoretically, a direct method such as this one should not experience any failures. Dry holes have often been referred to as geological successes and economic failures, where the presence of structure was confirmed by drilling but no saturated-sand bodies were found. Such is not the case with soil analysis, for there cannot be a chemical success without an economic success as well, because the chemical method has as the source of its significant data the buried deposits of petroleum only—not a favorable structural condition which may prove barren.

For these reasons, soil-analyses failures are more difficult to explain or justify than those experienced by structure-mapping instruments. It is believed that lack of experience, and the human element in interpretation, have resulted in many improper conclusions. Also, in the past recommendations have been made based on entirely too little sample information. Continued experience may prove that certain lines of weakness in the earth are permitting the abnormal accumulation of hydrocarbons in the soil, and under these circumstances skilled interpretation of both chemical findings and geological conditions involved will be necessary.

Looking to the future, some very interesting and important developments in laboratory technique may be contemplated. The application of photo-chemistry, the mass spectroscope, electrical magnetism, and improvements in quantative chemical procedures, are being closely investigated. Continued use of soil analysis over the next year as a part of exploration programs may be expected, while research on improvements of the method will continue on an increasing scale.

Shell Wins Safety Award

The National Safety Council awarded this handsome trophy to the natural-gasoline department of Shell Oil Co., Inc., for achieving a total of 239,440 man-hours worked without a single reportable accident. Fred Doane, assistant operator in the Long Beach absorption plant, was chosen to receive the trophy from Vanita Mitchell, stenographer in the Long Beach production office. Mr. Doane has been an employe of Shell for 15 years and has never had an accident. The award is in recognition of the close cooperation between the management and employes of Shell Oil Co., Inc., in their efforts to reduce the number of accidents.

Improved Gas-Engine Waste-Heat Methods—Reported by A. G. A.

WITHIN the past 2 years industrial interest in the development of motive power by the use of internal-combustion engines fueled with regular metered city gas has grown so rapidly that recent reports made by the gas-engine power commitee, Industrial Gas Section, American Gas Association, concerning better methods of waste-heat utilization in connection with gas-engine applications will be of profit-producing concern to power-using industries. The improved procedures involve what is known as "high-temperature cooling" of internal-combustion engines, and are based upon the use of jacket cooling water at temperatures above 212° F.

It is significant that the gas engine is utilized principally for reasons of economy, and offers greatest advantage where gas rates (usually in natural-gas territories) make it possible to operate this type of equipment at considerable savings over other varieties of motive-power-developing machinery—even though an average of 30 per cent of the total energy content of the gas fuel is "wasted" as heat into the jacket cooling water and another 35 per cent into the exhaust gases. Obviously, any improvements in the means of putting to useful purposes this large proportion (65 per cent) of "waste" heat would considerably broaden the field of power applications in which savings can be realized by the use of natural-gas-fueled internal-combustion motors.

Lubrication Not Adversely Affected

D. W. Reeves, Oklahoma Natural Gas Co., Tulsa, chairman of A.G.A. gas-engine power committee for 1940, has prepared a report in which he discusses results observed in tests. Some of his observations are as follows:

Because of the fact that engine-jacket water is generally maintained at temperatures under 200° F., it has been difficult to use such water directly without additional heat being supplied from some outside source other than the engine itself.

Experiments have been carried on during the past few months in southern California, following several years of development work abroad, in high-temperature cooling of internal-combustion engines. By "high-temperature cooling" it is meant that instead of maintaining jacket-water temperatures of approximately 160° F., the temperature is raised to 215° F. and over. In some instances, temperatures of jacket water of from 300° to 400° F. have been tried; however, at these higher temperatures, lubrication difficulties have been experienced. At the lower temperatures, from 220° to 250° F., no mechanical difficulties have been encountered.

New Methods Cut Costs and Increase Plant Capacity

It will immediately be apparent that with waste heat from the jacket water at 212° F. and over, the uses for such heat in manufacturing are almost unlimited. For example, in the manufacture of ice the standard ammonia compressor plant can be very nicely powered with gas engines. Assume for instance, a plant with an ice capacity of 40 tons per 24-hour day. A 100-hp. gas engine operating at 70 lb. brake mean effective pressure to drive an ammonia compressor will be cooled with jacket water at a temperature of 220° F. and will have an exhaust temperature of 950° F. The amount of waste heat available from the engine-jacket water will be approximately 250,000 B.t.u. per hour, with approximately 227,500 B.t.u. per hour available from the exhaust heat using a waste-heat boiler of 65 per cent efficiency. This is heat which may be actually and economically recovered.

Utilize Excess Heat

By applying the waste heat to operate an absorption refrigeration machine such as the new Williams Air-O-Matic, refrigeration may be developed for reduction of ice-can water temperatures and fore-cooling of the liquid ammonia. The reduction in power expended per ton of ice manufactured will be as great as 25 per cent. Assuming that the present suction temperature is not already at the minimum operating point, the plant capacity may be increased by approximately the same amount, namely 25 per cent, without increase in gas consumption or power, by the device of increasing compressor speed, thus decreasing brine temperature.

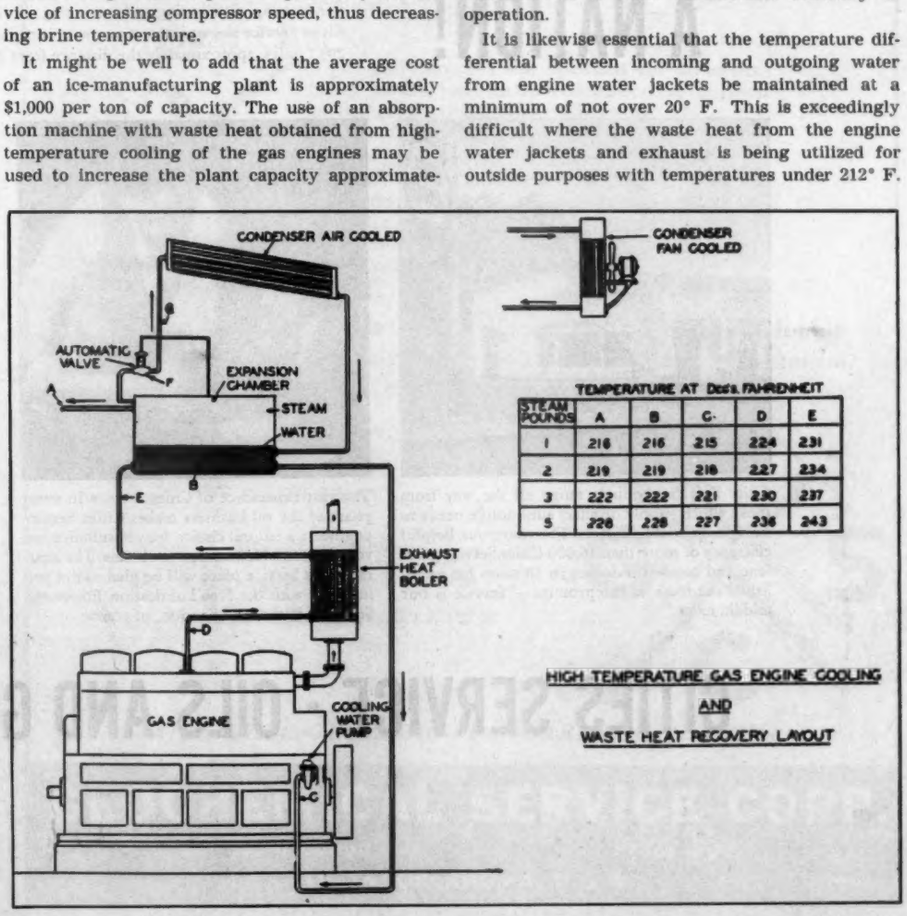
It might be well to add that the average cost of an ice-manufacturing plant is approximately $1,000 per ton of capacity. The use of an absorption machine with waste heat obtained from high-temperature cooling of the gas engines may be used to increase the plant capacity approximately 25 per cent with an increased plant investment cost of only about $200 per ton for the additional output, with of course the incidental reduction in operating cost of 25 per cent per ton.

High-Temperature Cooling

There is an added advantage to be derived from high-temperature cooling, namely the automatically controlled heat balance obtained thereby.

For example, when an engine-jacket water temperature of 160° F. is maintained with water circulating through an engine at the rate of approximately 50 gal. per minute, it is quite possible that there will be times when the consumer will not require the heat in the full 50 gal. per minute, or it will be to his advantage to use less than that amount. When engine temperatures are maintained below the boiling point, for example, 160° F., the heat from the engine-jacket water and exhaust, if used for outside purposes, must be recovered at a continuously uniform rate. If all of the heat is being absorbed in a heat exchanger at one time and only a portion of the heat is absorbed or used at another period during operation, the operating temperature of the engine so fluctuates as to cause considerable difficulty in operation.

It is likewise essential that the temperature differential between incoming and outgoing water from engine water jackets be maintained at a minimum of not over 20° F. This is exceedingly difficult where the waste heat from the engine water jackets and exhaust is being utilized for outside purposes with temperatures under 212° F.



TEMPERATURE AT Deg's FAHRENHEIT

STEAM POUNDS	A	B	C	D	E
1	216	216	215	224	231
2	219	219	218	227	234
3	222	222	221	230	237
5	228	228	227	236	243

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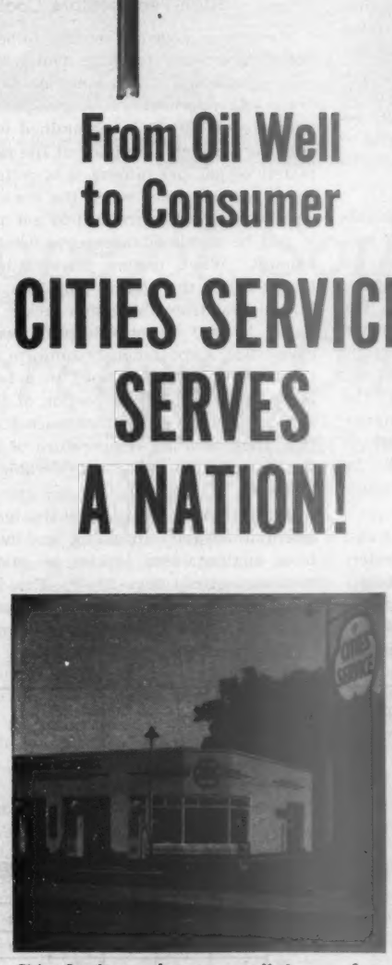

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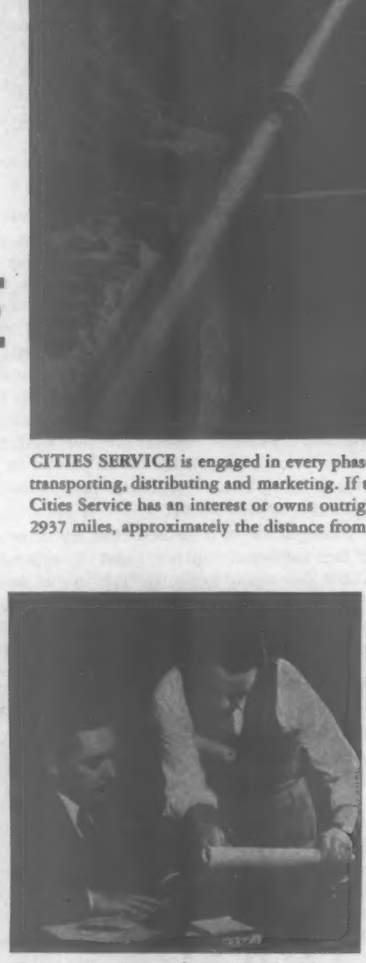

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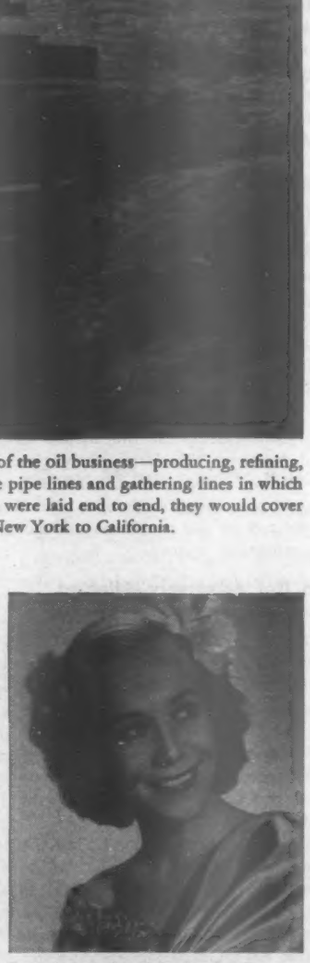

For 14 years, the Cities Service Concert, the oldest full hour radio program of the oil industry, has delighted millions of listeners on Friday evenings. It stars Lucille Manners (shown above), Ross Graham, and the Cities Service Singers and Orchestra, directed by Frank Black.

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At the higher temperature it is possible to take all or any portion of the heat without upsetting the balance in the engine.

The foregoing is, of course, only one of the many examples of the way the new principle of high-temperature cooling may be used for increasing the overall thermal efficiency of a natural-gas power unit. It represents a great potential saving in operating costs where it may be used to advantage.

Circulating-Water Temperatures at Various Steam Pressures

The operation of an engine using the high-temperature method of cooling is best shown in the accompanying illustration. It illustrates an installation where a condenser may be installed on the roof, either cooled atmospherically or by means of a fan. The expansion chamber *B* contains water at 212° F., which is at the boiling point. The water leaves the expansion chamber, passing through the main cooling water-circulating pump. By the time the water enters the engine, the temperature has dropped to approximately 211° F. Passing through the engine, the water will increase in temperature to approximately 220° F.

As the water leaves the engine and is passed through the exhaust heat exchanger or boiler, the temperature rises to 227° F. The water at 227° F. mingles with the water in the expansion tank, and is dropped to 212° F. The steam liberated in the expansion chamber may be lead away through pipe *A* for any indirect heat usage desired, the condensate being returned to the expansion chamber (not shown).

An automatic valve *F* is installed in the line *G* connected to the condenser. This valve is set from one to two pounds above the pressure of the steam being used at *A*. Should the requirements for steam at *A* decrease or cease entirely, the pressure in the expansion tank will rise, the automatic valve *F* will open and the steam generated will pass through the condenser, from which it will return to the expansion chamber.

Usually atmospheric-pressure steam is not sufficient for average plant requirements, and in consequence, the pressure must be raised to obtain the higher temperatures. A table of temperatures at various points in the system is given in the illustration for pressures from 1 to 5 lb. in the expansion chamber.

Where a tank of water is to be heated, the engine water (or steam from the expansion chamber) may be taken direct to a heat exchanger located in the water tank and then returned as condensate.

Where the waste heat from the engine is desired for space heating, unit heaters or condensers may be installed wherever the heating is required and the engine water (or steam from the expansion chamber) may be piped to and from the individual unit heaters (used as condensers when steam is generated).

When warm air is desired from gas-engine "waste" heat, it is not necessary to install condensers equipped with motor-driven blowers or fans near the engine, with an elaborate and expensive system of duct work to the locations in the plant where the heat is required. The piping of the engine water, or steam, is much simpler and requires less space with only a slight addition in power required for the circulating pump, which will be more than offset by the smaller blower needed at the point of heat application. The heat losses in the system where engine water, or steam, is piped to and from the unit heaters, will be appreciably lower than where the heated air must be transmitted through long ducts to various portions of the plant.

The high-temperature method of cooling natural-gas engines makes available from 4 to 5 lb. of steam at 230° F. per b.hp.

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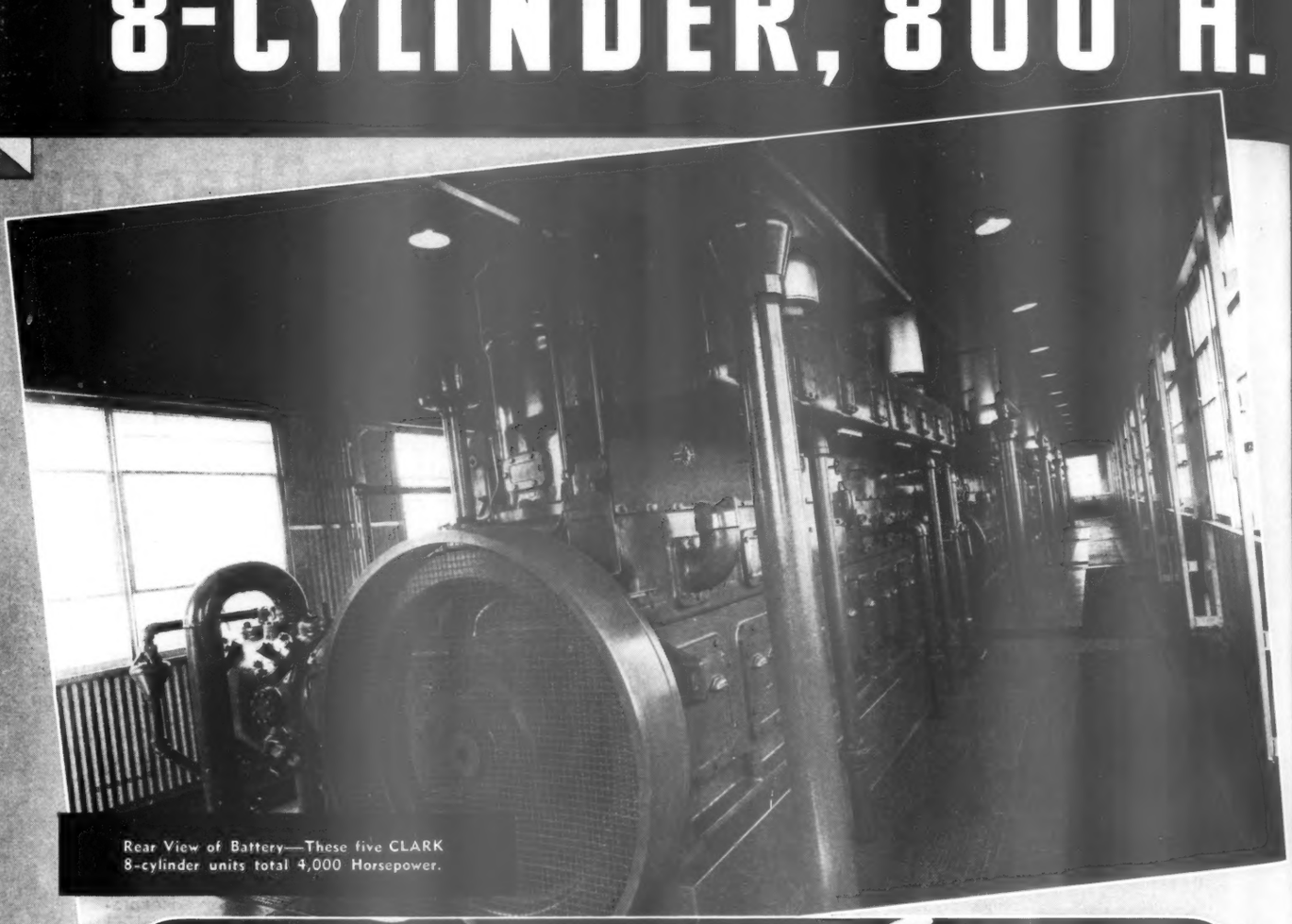
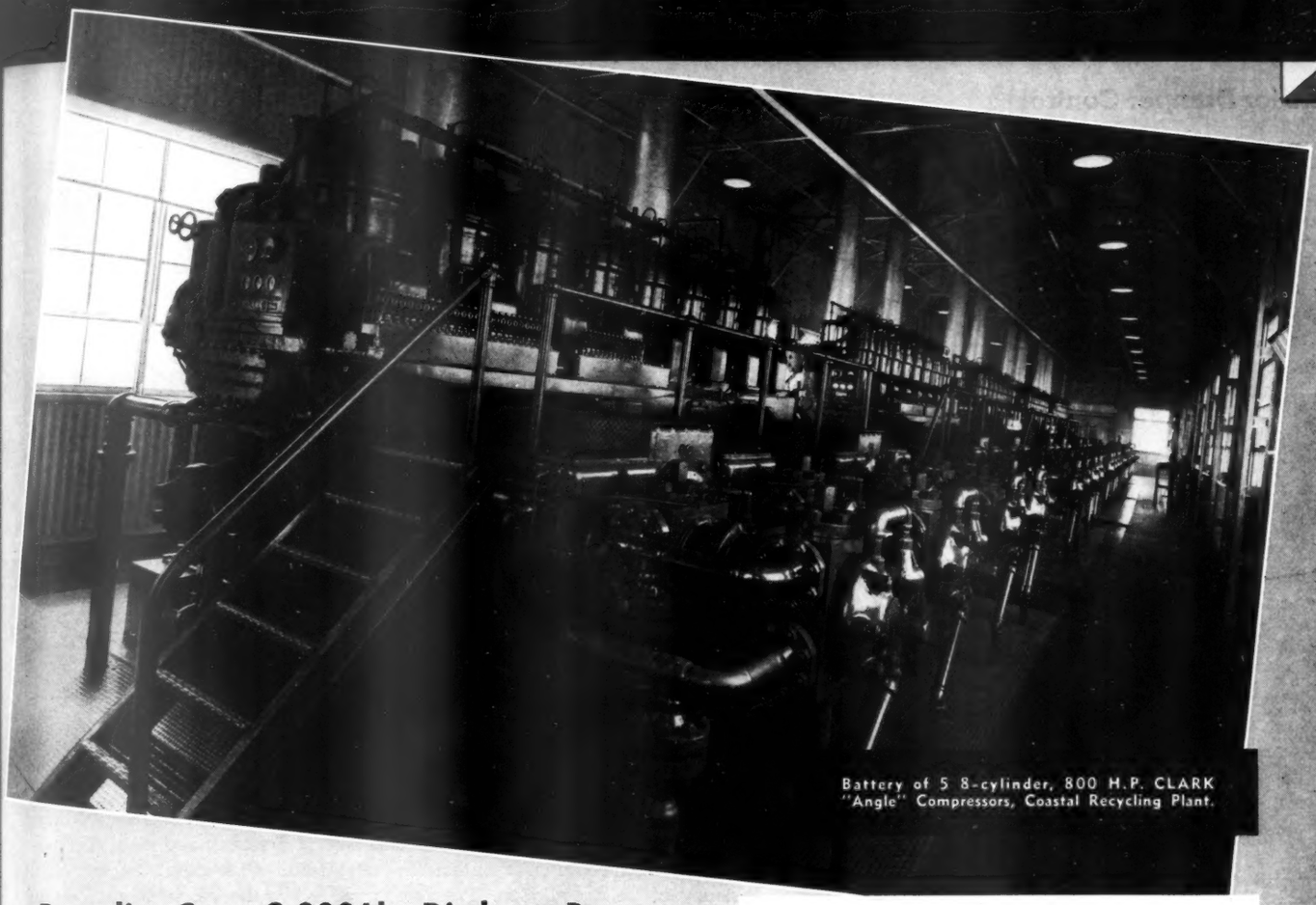
8-CYLINDER, 800 H. P



Rear View of Battery—These five CLARK 8-cylinder units total 4,000 Horsepower.

View of Compressors looking down walkways above compressor cylinders. Each cylinder at right represents 100 H.P.

. P. CLARK "ANGLES"



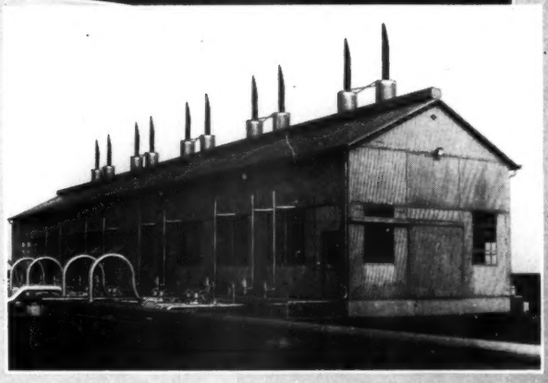
Battery of 5 8-cylinder, 800 H.P. CLARK "Angle" Compressors, Coastal Recycling Plant.

Recycling Gas at 2,000 Lbs. Discharge Pressure

THE Photographs show several views of the big CLARK "Angle" installation in the new recycling plant of the Coastal Recycling Corporation at Banquete, Texas. This plant is returning gas to the formation at approximately 2,000 pounds discharge pressure.

The compact design of the CLARK "Angle," maintaining Clark standards of extreme simplicity,—is one of the unit's outstanding features. These machines as compared with the older horizontal compressors of equal capacity require less than one-fourth of the concrete for foundations and less than one-half the floor space. Batteries of CLARK "Angles" are customarily installed in buildings only 24 feet wide.

The CLARK "Angle" has become the preferred equipment for any service requiring compressing of gas, particularly booster stations, gasoline plants, recycling and repressuring. Though of lighter weight and higher speed than the famous CLARK 2-Cycle Horizontal Compressor, it has proved in use to be the equal of the horizontal in efficiency and reliability while offering four substantial savings, viz: Lower transportation and erection costs, smaller foundations and floor space, fuel saving due to CLARK Super-2-Cycle Fuel Injection, and lower maintenance due to extreme simplicity of design. It will pay you to thoroughly investigate these savings.



Exterior of Compressor Building Housing the Battery here shown. CLARK "Angles" Can be Installed in buildings only 24 feet wide.

CLARK BROS. CO., INC. . . OLEAN, N. Y., U.S.A.
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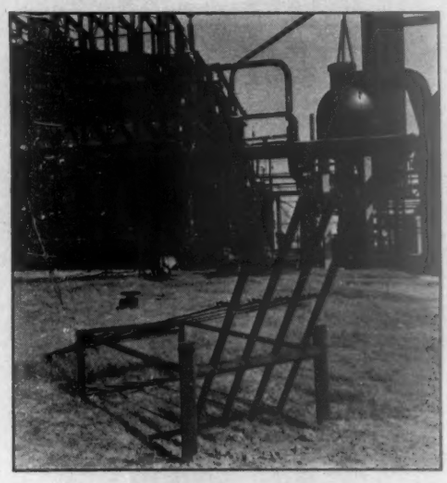
Domestic Sales Offices and Warehouses: Tulsa, Okla.; Houston, Texas; Chicago, Ill.; Boston, Mass. (131 Clarendon St.) West Coast Offices: Smith-Booth-Usher Co., Los Angeles, Cal. Foreign Offices: 72 Turnmill St., E. C. 1. London; 4 Str. General Poetas, Bucharest, Roumania.

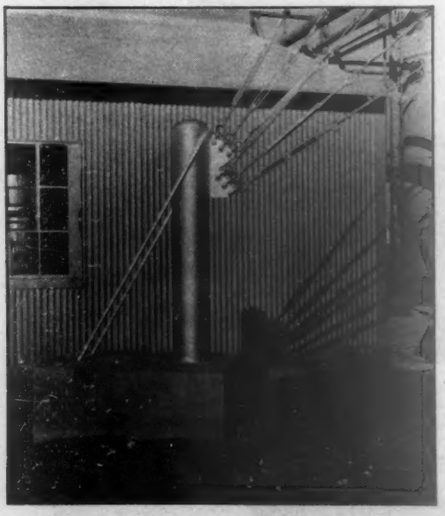
CLARK

Operating Ideas

Levers for Damper Control



At a refinery at Corpus Christi, Tex., provision has been made for controlling dampers of two large furnaces by means of levers, set in a frame at a distance from the furnaces. The levers are welded to a common shaft and operate together as a unit. Steel cables extend from the dampers through conduits to the lever-controlling device. Two cables are attached to each lever.

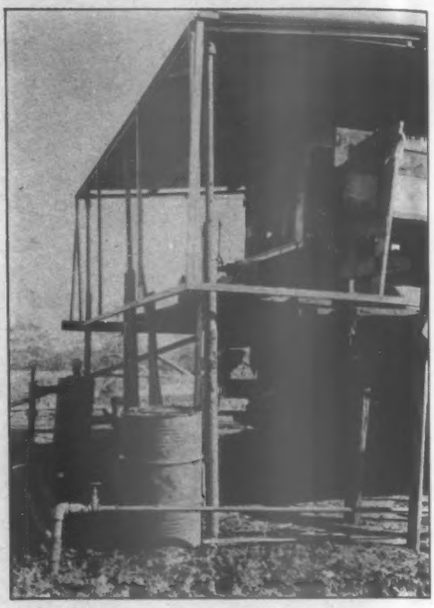


Anchor for Guy Wires

At a natural-gasoline plant in West Texas, completed in recent months, there are three water-tube boilers which are equipped with smoke stacks 100 ft. high. A special type of anchor was made for holding the guy wires. The base consists of a concrete block, the lower part of which is sunk 7 ft. into the ground. In this is set an 8-in. bull-headed nipple; a steel plate of a special saw-tooth shape was welded near the top of the nipple; perforations were made near the edge of the plate for clevises which hold turnbuckles on the ends of the guy wires. A bent reinforcing rod, welded to the nipple and set in concrete block, gives additional stiffness to the anchor.

Housing for Drilling Engines

At one rotary rig in the Walnut Bend field of Cooke County, North Texas, the crew has constructed a housing for drilling engines in such a way that it forms a steady structure when in place, but, it is easily knocked down when the rig is moved. The roof of the housing is fastened to the derrick on hinges, and at the outer side it is held by three adjustable supports. The supports are made of used 3-in. pipe with 2-in. running inside it. Thus by means of holes cut in the 2-in. the height of the housing may be adjusted at the outer end by inserting steel pins in the holes so that the housing is leveled. The upper ends of the 2-in. are fastened to steel-pipe sockets attached to the roof, by means of removable pins. Siding, not yet added when the picture was taken, consists of a welded angle-iron frame covered with light-gage steel. When the rig is to be moved, the pins are removed at the top and the roof folded back against the derrick; by removing one bolt at each corner the sides are removed.



Three Engines Drive Electric Generator

On a producing property where power is generated for operating submerged centrifugal pumps, three engines drive one generator. Shafts and belting are arranged so that advantage can be taken of the floating-axle situation exisiting at the shaft of the middle engine which increases the efficiency of the installation. Pressure is applied by the V-belts in such a way that an equalized condition exists at the shaft of the middle engine which means that friction is much reduced, insuring improved operating conditions in this installation.

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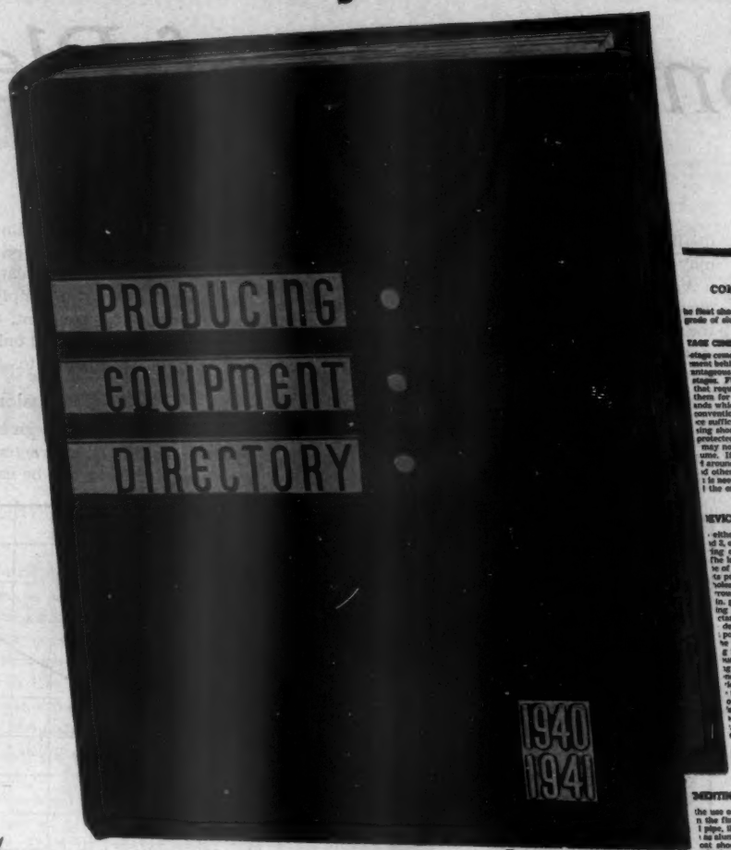

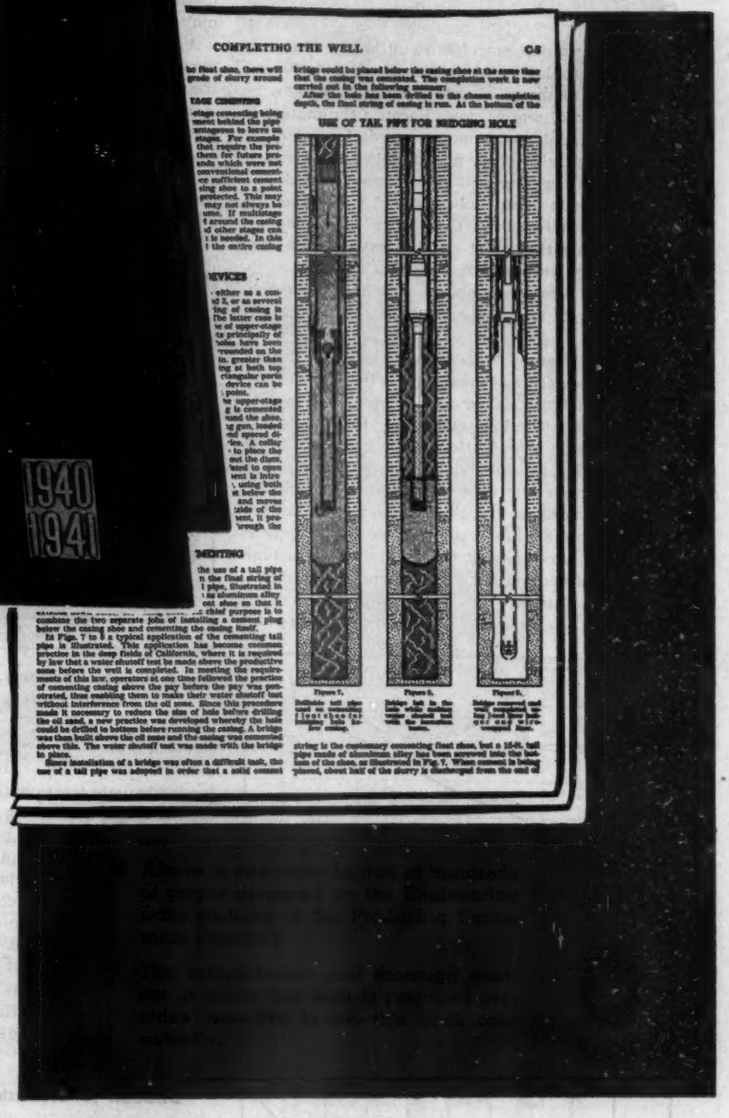
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USE OF TAIL PIPE FOR BRIDGING HOLE

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Distillation Curves of Blends

By W. L. NELSON

THE estimation of the distillation curves of the many intermediate products that are encountered in designing petroleum equipment is one of the major problems of design engineers. Obviously, the curves of many of these materials cannot be obtained by laboratory tests because the materials are never withdrawn from the processing system—being mixed with other products in the course of the plant processing and never appearing as finished products except when mixed with other intermediate materials in the plant. Examples are the materials that exist on the trays of fractionating towers, various mixtures that are flashed together in a common evaporator as in many cracking plants, and many other materials too numerous to mention.

When confronted with such a situation, the design engineer can only reach for whatever distillation data is available for similar stocks or to estimate the distillation curve of the necessary material by an examination of the curves of other materials that are involved in the processing. No other methods short of expensive experimental work are available, but the designer must beware of attributing too much significance to any type of distillation curve except those obtained by a high degree of fractionation. The purpose of this article is to illustrate the dependability of curves computed or estimated from true-boiling-point distillation curves and the misleading results that may arise from the use of A.S.T.M. curves.

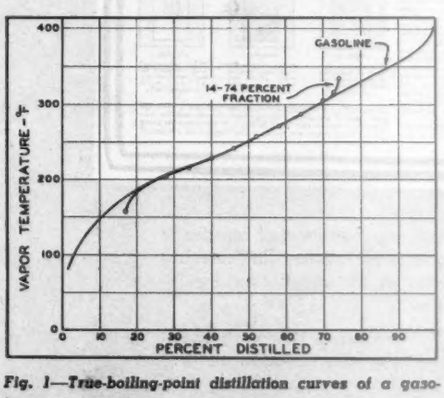


Fig. 1—True-boiling-point distillation curves of a gasoline and a 14-74 per cent fraction of the same gasoline

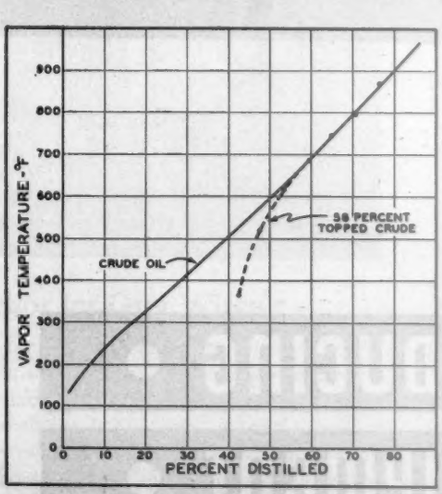


Fig. 2—True-boiling-point distillation curves of a Mid-Continent petroleum and its 58 per cent topped crude

A common situation is to have a true-boiling-point curve of a crude oil or raw stock and wish to know the distillation curves of cuts or parts of the raw stock. Figs. 1 and 2 illustrate the distillation curves of cuts of material as compared with the original raw stocks. Fig. 1 was obtained by distilling a gasoline in a true-boiling-point column and collecting three main fractions,[1] the first extending from 0 to 14 per cent, the second from 14 to 74 per cent, and the third from 74 to 100 per cent. The 14-74 fraction was then distilled in a true-boiling-point column with results as shown in the figure. Except for inadequate fractionation at the ends of the cut, the materials check with each other within experimental error. Fig. 2 is proof that true-boiling temperature can be duplicated. The figure shows true-boiling-point distillations of a Mid-Continent crude oil and a 58 per cent reduced crude oil that was produced from the crude oil by a batch distillation.[2] The fact that the front part of the reduced crude-oil curve is low is of no significance because no attempt was made to obtain fractionation in the batch distillation. However, after a few per cent had been distilled the two curves are coincident.

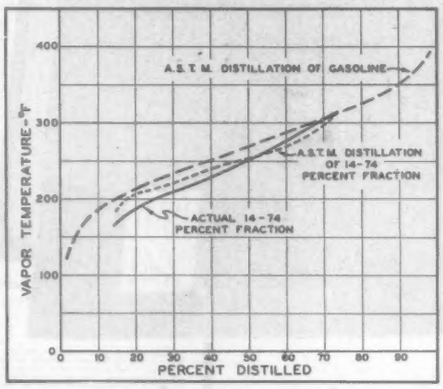

A.S.T.M. DISTILLATION OF GASOLINE
A.S.T.M. DISTILLATION OF 14-74 PERCENT FRACTION
ACTUAL 14-74 PERCENT FRACTION
VAPOR TEMPERATURE - °F
PERCENT DISTILLED

Fig. 3—Curves illustrating the relation of the actual boiling range to A.S.T.M. curves

Difficult to Estimate Distillation Curve

Fig. 3 was prepared to show how difficult it is to estimate the distillation curve of a cut or fraction from any type of curve other than the true-boiling-point curve. The actual distillation range of the 14-74 per cent fraction of the gasoline shown in Fig. 1 is shown in Fig. 3 as a hard line, whereas the A.S.T.M. distillation curves of the gasoline and the 14-74 per cent fraction are shown as dotted lines. There appears to be little relation between the curves in Fig. 3 by which the boiling range of the 14-74 per cent cut can be estimated, but a good approximation can be had from Fig. 1 with little difficulty.

As a further check on the dependability of true-boiling-point data, a blend of the three main fractions of Fig. 1 was made,[1] and its distillation curve was determined experimentally. The blend consisted of the following parts:

	Per cent
0-14 per cent part of gasoline	16.7
14-74 per cent part of gasoline	50.0
74-100 per cent part of gasoline	33.3
Blend	100.0

The experimental true-boiling-point curve of the blend is shown in Fig. 3 and the circle points are points computed from the data of Fig. 1. The computations consisted of simply spreading the 0-14 fraction over 16.7 per cent, compressing to 14-74 fraction so that it covered only 50 per cent extending from 16.7 per cent, etc.

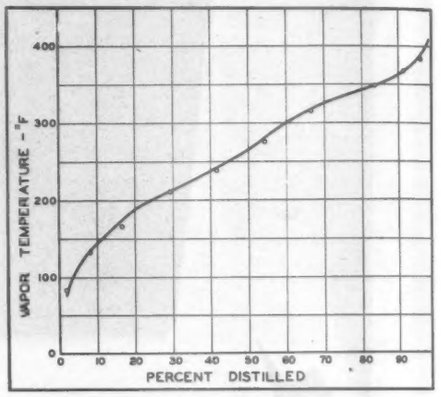


Fig. 4—Experimental and computed curves of a blend of three fractions

Conclusions

From the comparisons given above, it is evident that the distillation characteristics of fractions or intermediate stocks can be estimated with fair accuracy from true-boiling-point distillation curves. Except at the very ends of intermediate fractions, the distillation curves of fractions are the same as the corresponding range of percentage on the curve of the parent materials.

If true-boiling-point curves for several materials are available, the distillation curves of various mixtures of the materials can be computed by the general principle of additive properties.

References

1. Hansburg, M., "Correlation of Distillation Curves," master's thesis, Univ. of Tulsa, 1939.
2. Private communication to the author.

Metallurgical Terms

Rockwell Hardness Test

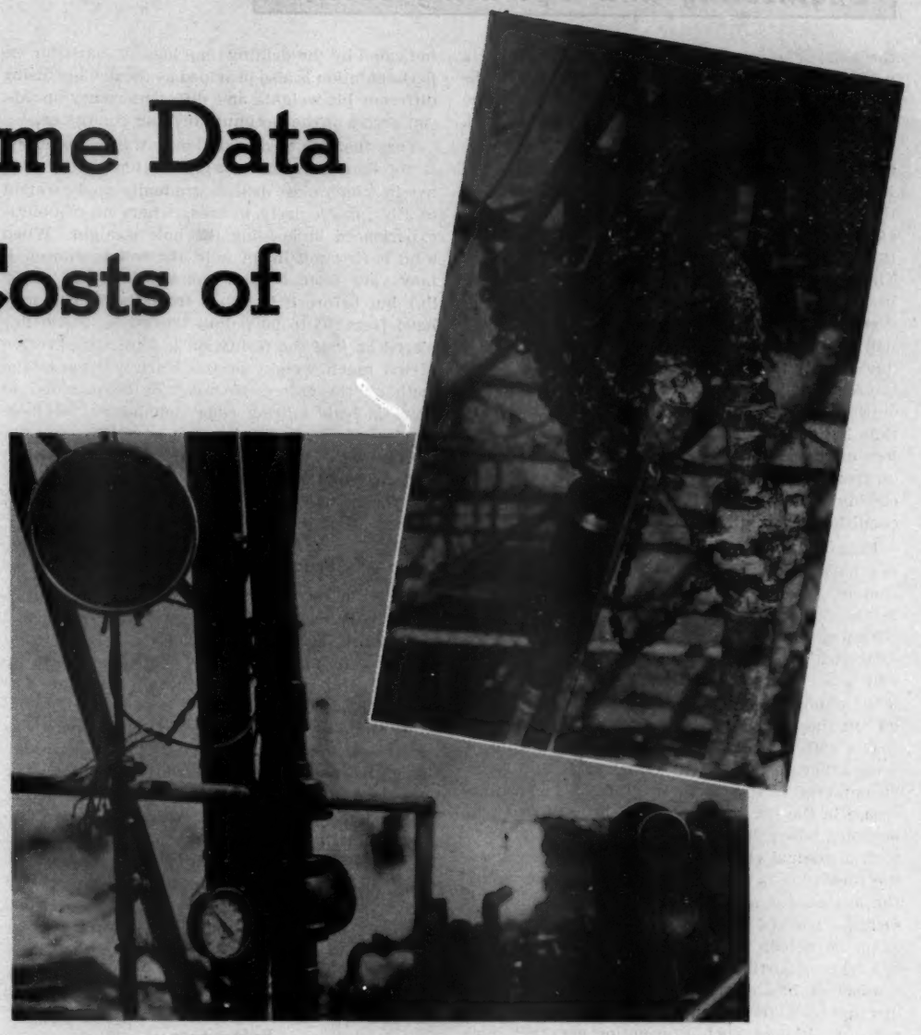
Rockwell Hardness Test.—An indentation test (A.P.I. Code No. 28) which expresses hardness as numbers based on the difference between the depths of penetration of a steel ball or diamond cone at major and minor loads. Rockwell A hardness is determined with a minor load of 10 kg., a major load of 60 kg., and the diamond cone. Rockwell B hardness is determined with a minor load of 10 kg., a major load of 100 kg., and a $\frac{1}{16}$-in. steel ball. Rockwell C hardness is determined with a minor load of 10 kg., a major load of 150 kg., and the diamond cone.

Nickel-Clad Steel

Nickel-clad steel is specifically recommended for such services in the oil industry as sour-distillate equipment, tank roofs, caustic and acid-treating equipment, condenser shells, shipping barrels, and chlorinators. These applications as well as prices for nickel-clad plate are given in Bulletin 18 of the Lukens Steel Co., Coatesville, Pa. In instances where the corrosion of plain steel is three or more times as active as upon nickel, the use of nickel-clad steel appears to be economical.

Drilling-Time Data Reduces Costs of Drilling

By HARRY F. SIMONS



Inset: Fluid chamber on rate of penetration recorder attached to swivel; the recording device is kept in the tool house. Immediately above: Weight indicator, pump gage and tachometer for rotary table complete the equipment for gathering drilling-time data

THE recording of drilling-time data was started several years ago as an aid in correlating formations. Many geologists were skeptical about the cooperation of drilling crews in obtaining the information required. However, this information was found to be useful to the crews, particularly in determining when a bit should be withdrawn from the hole. Similar information had actually been loosely gathered by drilling crews for years.

The Pure Oil Co. in its Illinois operations has found its drilling crews used the drilling-time data in reducing the number of bits and time required to drill a well as the information indicated soft and hard streaks, proper amount of weight, correct rotary speed, best type of bit to use and condition of the bit in the hole.

There are not many drilling rigs equipped with instruments for recording the drilling time, the method still being to mark the kelly joint with tool-joint compound and then log on a piece of paper the number of minutes required for each succeeding foot mark to go through the rotary table. The unfortunate part of this procedure is the failure to file the data collected so it will be available for further use; and generally the logging of drilling time is not continued throughout the entire hole but is confined to isolated portions where a change in formation is expected. For comparative purposes the drilling crews generally rely on the log books of previous wells drilled in the same field, but they do not contain enough definite and accurate information on changes in formation or drilling rate. The best that can be arrived at is an average figure for the approximate depth.

Two Types of Recorders

Some companies and some contractors have drilling-time recorders on their rigs. There are two types in use, both of which are attached to the swivel and record its height on a time chart. The device thus measures the time it takes for the drilling of each foot of hole. The principal difference in the two devices is that one operates mechanically and the other hydraulically.

Pure Oil Co. uses the type recorder which operates by fluid, a cylinder being attached to the swivel and connected by a flexible tube to the recording instrument located in the tool house alongside the derrick floor. The rotary table, individually driven by an internal-combustion engine through torque converter, has a tachometer-odometer showing revolutions per minute and registering total revolutions connected to it by a flexible cable. A weight indicator and pump-pressure gage complete the instruments for collecting the drilling-time data.

Numerous factors affect the time it takes to drill a specified amount of hole, including the amount of weight run on the bit, rotary speed, torque, viscosity, and weight of the mud, type of bit being used, condition of the bit, and type of drill pipe and tool joints used. For the purpose of geological interpretation as many as possible of these must be kept constant but, for increasing the footage per tour and the footage per bit, the first five must be changed quite often.

When drilling-time was first collected in the Clay City, Ill., field, Pure Oil Co. engineers were seeking fundamental information on what happened in the hole as well as material to aid in correlation of formations. The rotary table was turned at a constant speed on each well and the engineers were able to select the average speed at which drilling was the fastest and the number of revolutions required to dull each bit and the average revolutions of the pipe per foot drilled.

Most Effective Speed

Rotary-table speed was increased on each well and the time required to drill each successive hole decreased until a speed of 225-250 r.p.m. was reached. This was found to be the speed at which the hole was made the quickest. Increasing the rotary speed to 300 r.p.m. resulted in a slight decrease in the rate of cutting. At the present time, drillers are selecting the rotary-table speed and the amount of weight used on the bit in an effort to decrease time and number of bits required to drill each hole. The plan is proving effective.

Drillers on the rig equipped with the drilling-time recorder have had several years' experience in drilling in this particular area and the formations are fairly regular. Plottings of previous drilling-time records show the variations of the cutting rate in the formations. With this material available they are able to select the proper bit to run in the hole, the weight and speed at which the bit will cut the fastest, and approximately when the bit is worn to the point where it needs pulling from the hole.

This last-named factor is one which has bothered all drillers and contractors to a considerable degree because a bit once pulled from the hole is seldom run again. However, the determination of the dullness of a bit is still dependent on the driller's judgment as the variation in hardness of formations prevents the development of a formula that will indicate from the total revolutions, or the cutting rate, when a bit is worn. A curve showing the penetration of each bit, plotted from the original data, is very helpful as it indicates the approximate amount of footage the bit should make. This becomes particularly useful if the condition of each bit when pulled from the hole is recorded, along with the footage made. The driller may then see that on previous wells at the same depth (allowing for difference in elevation and dip of the formations) that a bit made a certain amount of footage, cut the formation at a certain average rate, but was only partially worn when pulled from

the hole. The bit can then remain in the hole a while longer without danger of appreciably decreasing the rate of penertation, while at the same time the footage of the bit is being increased.

A study of drilling-time logs shows that the decrease in cutting speed as the bit is worn varies in different localities and in different portions of the same hole. When the time required to drill each foot in the same formation has increased two to three times, the bit is evidently getting worn. This increase in minutes per foot may take place in a few feet or it may take place in several hundred feet. Careful study of the drilling-time log will show whether the retardation of the rate is due entirely to wearing of the bit or to a change in the formation, a sharp increase or decrease in the cutting time indicating the latter. A study of the time log of the well being drilled along with the logs of other wells in the area will thus prevent a bit from being pulled from the hole when its slow cutting rate is due to the formation and not the condition of the bit.

Examination of the time logs from wells drilled previously in the same field also aid in the reduction in the number of bits required on each well as the information will allow the driller to take advantage of the "soft spots" which will drill as easily with a dull bit as with a sharp one. A bit which is cutting slowly through shale, due to its being almost in a definitely dull condition, can be left in the hole if the drilling-time records show that a soft, friable sandstone, porous dolomite or some other easily drilled formation is due to be encountered in the next 5 or 10 feet. A sharp decrease in the time required to drill each foot will be noted when the soft formation is encountered, with a gradual retardation of the drilling rate as the formation is penetrated; when the bit enters the less porous and slower drilling formation beneath, a marked change in the drilling time will again be noted. It is then time to install a new bit. This is particularly effective in reducing the number of bits required on the well as the fast drilling of a formation is generally due to its porosity although such a formation generally contains considerable abrasive material which will remove the cutting edge from a new bit and make it drill slower than it should when it encounters the softer but less porous formation beneath; the effect of a porous but abrasive formation on a worn bit is negligible as there is no intention of using it beyond that particular formation.

Selection of Proper Bit

Selection of the proper bit is also easier for the driller if ample drilling-time data are available. Bits are manufactured with a particular type of formation in mind and the proper bit to use, with a consequent reduction in time and bit costs is indicated by the drilling-time logs. A basis for experimentation is also provided as the drillers, using different bit weights and different rotary speeds, can arrive at the optimum drilling conditions.

That the rate of retardation within a formation is not sharper is due to a great extent to the manner in which most drillers gradually apply weight to a bit, particularly in areas where no trouble is experienced in keeping the hole straight. When a bit is first put in the hole, the weight run on it may vary from 5 to 10 points (10,000 to 20,000 lb.) but before it is pulled from the hole it may have from 10 to 20 points (20,000 to 40,000 lb.) placed on it if the formation is hard. Application of too much weight at the start will cause the teeth on the cutters to break or be pounded so there is little cutting edge remaining; the later application of weight does not have this effect as the cutting edges are rounded and worn down to some extent. Application of excessive weight in soft formations decreases the cutting rate instead of increasing it.

Practice Still in Infancy

While the recording of drilling-time data is practically still in its infancy, its basic purposes and methods have been in use a long time although the methods have been very loosely applied. Introduction of the recording weight indicator was an important feature and its improvement to include pump pressure, torque and rotary speed was a great aid in reducing bit and drill-pipe costs although its possibilities in this direction were never exhausted. Use of bit records, in which the driller recorded the essential data, was likewise an important addition. The present efforts of Pure Oil Co. in the recording of drilling time applied directly to the rotary rig may mark a further step in the reduction of drilling costs. Geologists and engineers of other companies are using similar methods and although generally their purpose is to obtain better correlation of formations, the data are proving useful to drilling organizations.

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Drilling-Time Data in Rotary Practice (Part 2) by P. B. Nichols, Geological Engineer, Indian Territory Illuminating Oil Co., The Oil and Gas Journal, July 20, 1939, p. 40.

Progress Report of Eastern Division Drilling Practices Committee of A.P.I., The Oil and Gas Journal, July 20, 1939, p. 50.

Will Award Prizes in Safe Driving at Exposition

Twelve individual prizes will be awarded by the International Petroleum Exposition to supervisors and drivers of company-owned passenger automobiles and trucks on the basis of their accident-free records in safety contests according to H. W. Boggess, superintendent of safety, Sinclair Prairie Oil Co., Tulsa, who has been named chairman of the safety committee for the May 18 to 25 Tulsa oil show.

"One division of the safety contest will be conducted to determine the supervisor or foreman in each of the four main divisions of the oil industry—production, refining, pipe line, and marketing—having the greatest accumulation of accident-free man-hours of work to his credit up to and including December 31, 1939," Mr. Boggess announced.

Eight prizes are to be awarded to the four drivers of passenger cars and the four drivers of company trucks in each of the four branches of the industry, who have the greatest number of accident-free miles accumulated up to and including December 31, 1939. Each of the 12 contest winners will be awarded a gold-engraved wrist or pocket watch by the exposition at a safety banquet to be held May 23.

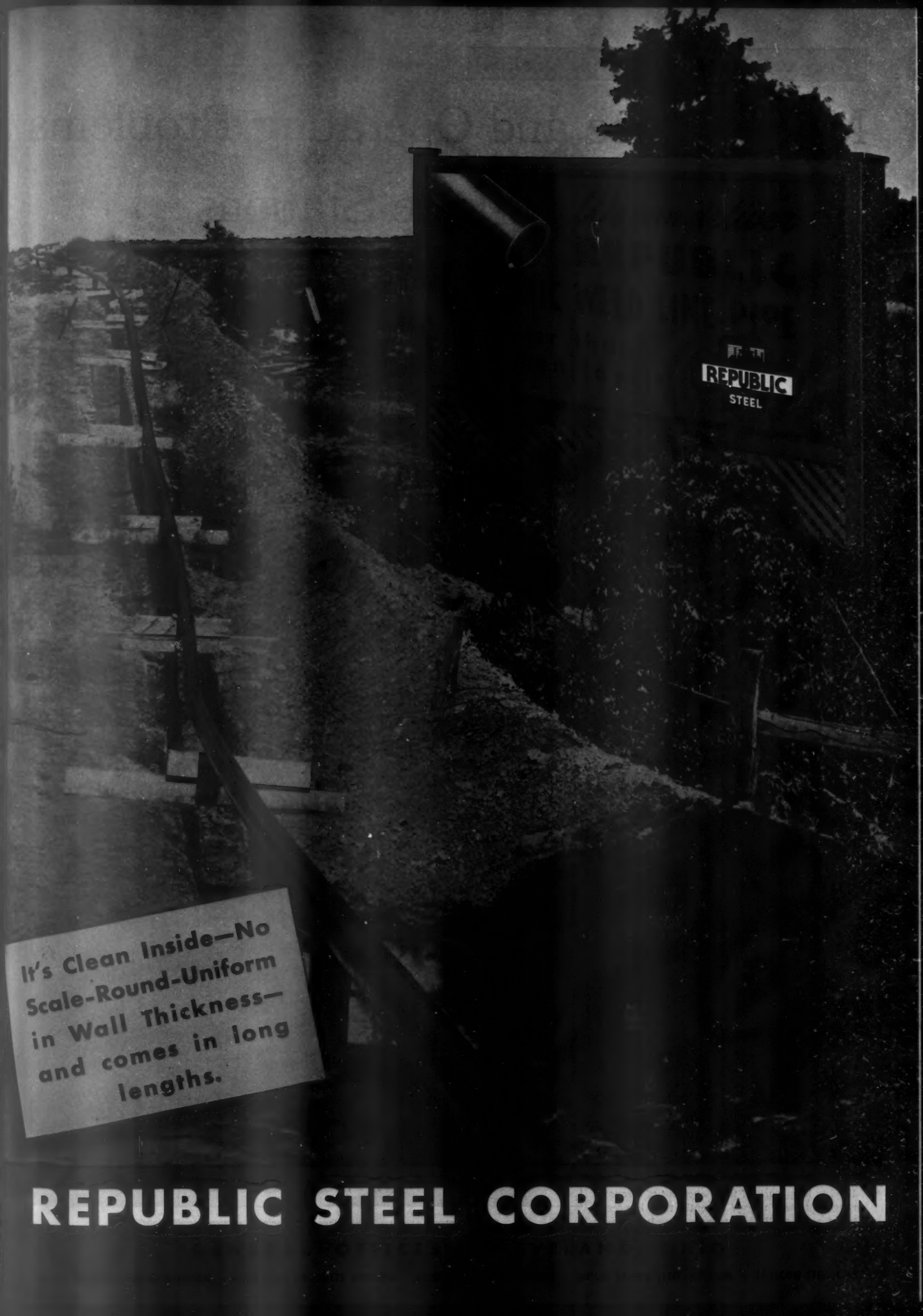
"Each competition is open to oil men throughout the world," Mr. Boggess continued. "The safety committee is asking exhibitors at the 1940 International Petroleum Exposition to portray the methods and devices they have perfected to further safety in the industry and it is fitting that men having the best records in accident prevention be properly recognized."

R. S. Huffman, personnel and safety director for the Oklahoma Natural Gas Co., Tulsa, is chairman of the committee on rules and regulations for the safety contests; official rules and entry forms may be obtained by addressing him in care of Box 871, Tulsa.

Members of Mr. Huffman's committee include: S. G. Buford, Indian Territory Illuminating Oil Co., Oklahoma City, Okla.; R. W. Cooper, Oklahoma Power & Water Co., Sand Springs, Okla.; and R. J. Lauder, Shell Oil Co., Inc.; J. H. Savage, Mid-Continent Petroleum Corp.; Ira G. Clark, Gulf Oil Corp.; and C. V. Williams, Employers Liability Assurance Corp., all of Tulsa.

Right: Control for operating rotary table driven by internal-combustion engine through torque converter

Left: Tapered reamer for making casing seat ready to run as soon as core is pulled from hole; engine for driving the rotary table can be seen at the left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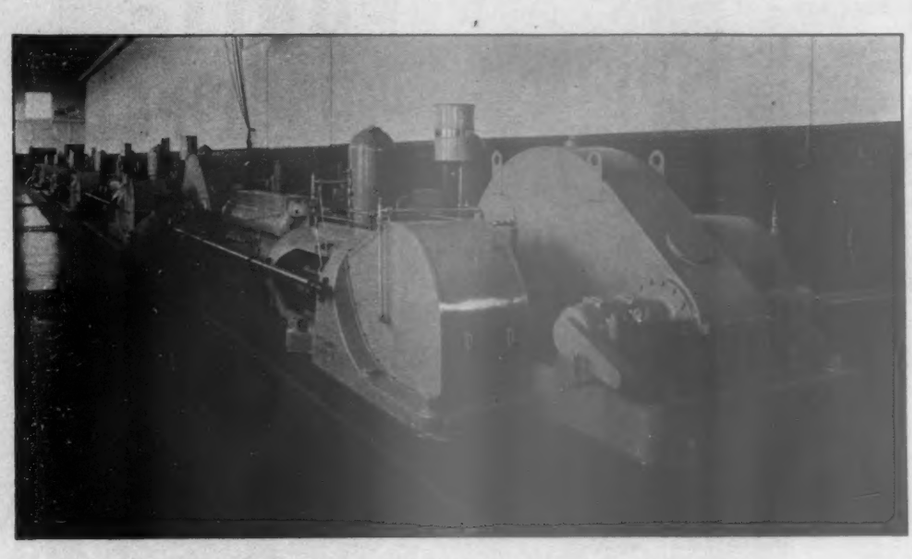
Maintenance and Operating Problems at Gasoline Pipe-Line Stations

By PAUL REED

Although some of the problems encountered in operating gasoline pipe-line stations are different from those found at crude-oil pipe-line stations, a large number of practices are applicable to stations of both types



Pumps at gasoline pipe-line station equipped with forced-feed lubrication system

THE operation of gasoline pipe-line stations in many ways resembles that of crude-oil pipe-line stations. However, there are certain matters of routine which are distinctly different. The purpose of this article is to mention certain operating practices which are to be observed at gasoline pipe-line stations of several companies with equipment of different types. Although some of these practices are necessarily confined to gasoline pipe-line stations equipped with reciprocating or centrifugal pumps driven by diesel or butane engines or electric motors, a number of these practices have an application at crude-oil pipe-line stations.

Among the routine practices to be observed at a gasoline pipe-line station which are different from those of a crude-oil pipe line, the most conspicuous is the attention which must be given by station employes to shipments of various grades of gasoline and other products passing through the line. Some companies have station employes observe the arrival of different grades entirely by hydrometer tests made at the times they are due to arrive. On some systems the dividing point between grades is indicated by a dye, sometimes called the "blue flag." At most gasoline pipe-line stations samples are taken and hydrometer tests are made in the manifold pit. Another problem which specially concerns gasoline pipe-line-station employes is that of attending to equipment installed for removing products of the internal corrosion of the lines. This is something crude-oil pipe-line operators do not have to bother with. One gasoline pipe-line system which used strainers for this purpose, found that the removal of strainers could be facilitated by the use of a davit designed for this work by company engineers; the davit is equipped with a lever-operated lifting device similar to those commonly used in packing houses. Gasoline pipe-line-station attendants are obliged to keep track of the movement of scrapers through the lines more frequently than is necessary on crude-oil lines. Improvements have been made recently in the installation of scraper traps which make it easier to handle scrapers at pipe-line stations.

In the care of mechanical equipment, gasoline pipe-line employes with previous experience on crude-oil lines observe that there is more packing-gland trouble on centrifugal pumps at a gasoline pipe-line station. Another thing that is observed is that gasoline-pump plungers unlike those in crude-oil service require lubrication. The lubricant is usually a soap-base pressure grease that is forced in place by a pressure gun. In the maintenance of reciprocating pumps, one gasoline pipe-line system has discovered that oil lubrication of gears by a forced-feed system gives more satisfactory results. This was determined when a comparison was made between identical units driven by synchronous motors pulling identical loads. Lower gear temperatures due to decreased friction loads and lower current consumption was observed at units lubricated by forced-feed lubrication than at units which were compound lubricated.

Maintenance of gasoline pipe-line stations must be conducted on most lines under conditions of continuous operation close to capacity of equipment. As a rule, all units are run nearly all the

Gasoline-pump plungers unlike those in crude-oil service require lubrication

Compact type of station building on major gasoline trunk line; the station is equipped with centrifugal pumps driven by butane engines

time. High-pressure operation is coming to be a characteristic of gasoline pipe lines. On a number of gasoline pipe lines, operating pressures are considerably above 1,000 lb. and the tendency appears to be in the direction of more high-pressure operations.

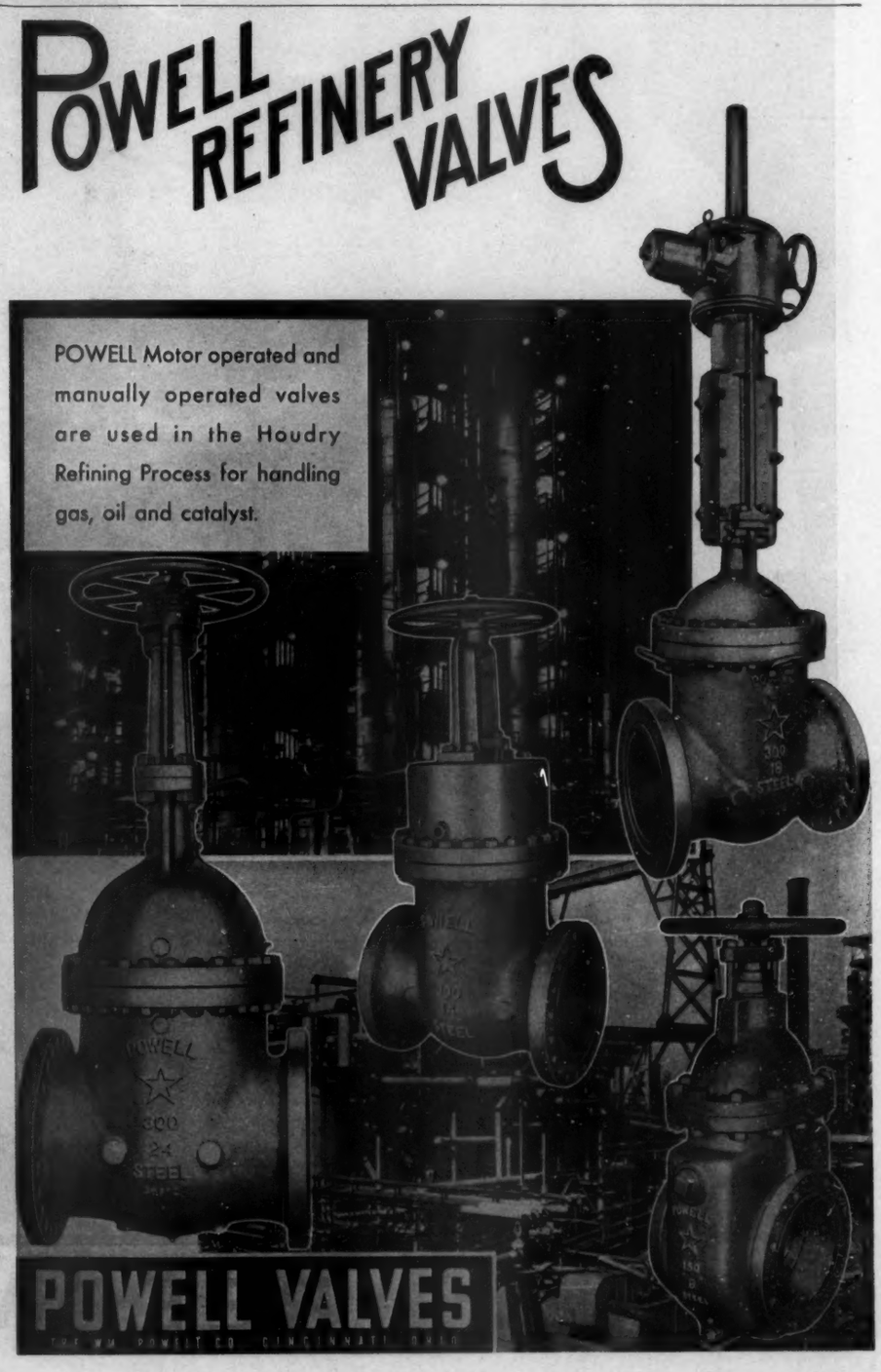
At stations operated by internal-combustion engines, cylinder pressures may be checked regularly by an indicator equipped with a time-pressure drum. The pressure-time diagrams taken in this way may be readily converted to pressure-volume diagrams from which mean-indicated pressure and mean-indicated horsepower may be determined. The pressure-time diagrams are generally used to show the compression maximum firing pressure of each cylinder. The engineers of one gasoline pipe-line company found that where engine-jacket water was frequently too cold for efficient operation it was advantageous to have connections installed which would provide for the injection of warm water in the stream returning to the engines. A recording-temperature controller insures that desirable temperatures are continuously maintained. In the last year there has been an increasing interest in the use of stress gages for checking the stretch in crank bolts. In using these, the stress gage is installed on the bolt when the bolt is installed in the bearing with the nut in place; the nut is tightened. The amount of stretch to be allowed for each type of bolt is prescribed by the master mechanic. The use of stress gages makes possible the adoption of practices leading to greater uniformity.

Policies followed in regard to handling repairs vary. A traveling repairman usually attends to overhaul work of importance. Certain minor repair operations must be carried on from time to time. One gasoline pipe line which operates stations with three shifts, prefers to have the daylight engineer act as repairman and make whatever changes and adjustments that are necessary. The advantage of having repairs made by one man is that greater uniformity becomes possible.

In order to promote economical consumption of lubricants and fuel, one gasoline pipe line prepares blue prints which are sent to each station every month. If one station gets out of line it becomes quickly apparent to every one along the line as well as to station employes where con-

(Continued on Page 76)

Indicator equipped with pressure-time drum for checking engine-cylinder pressures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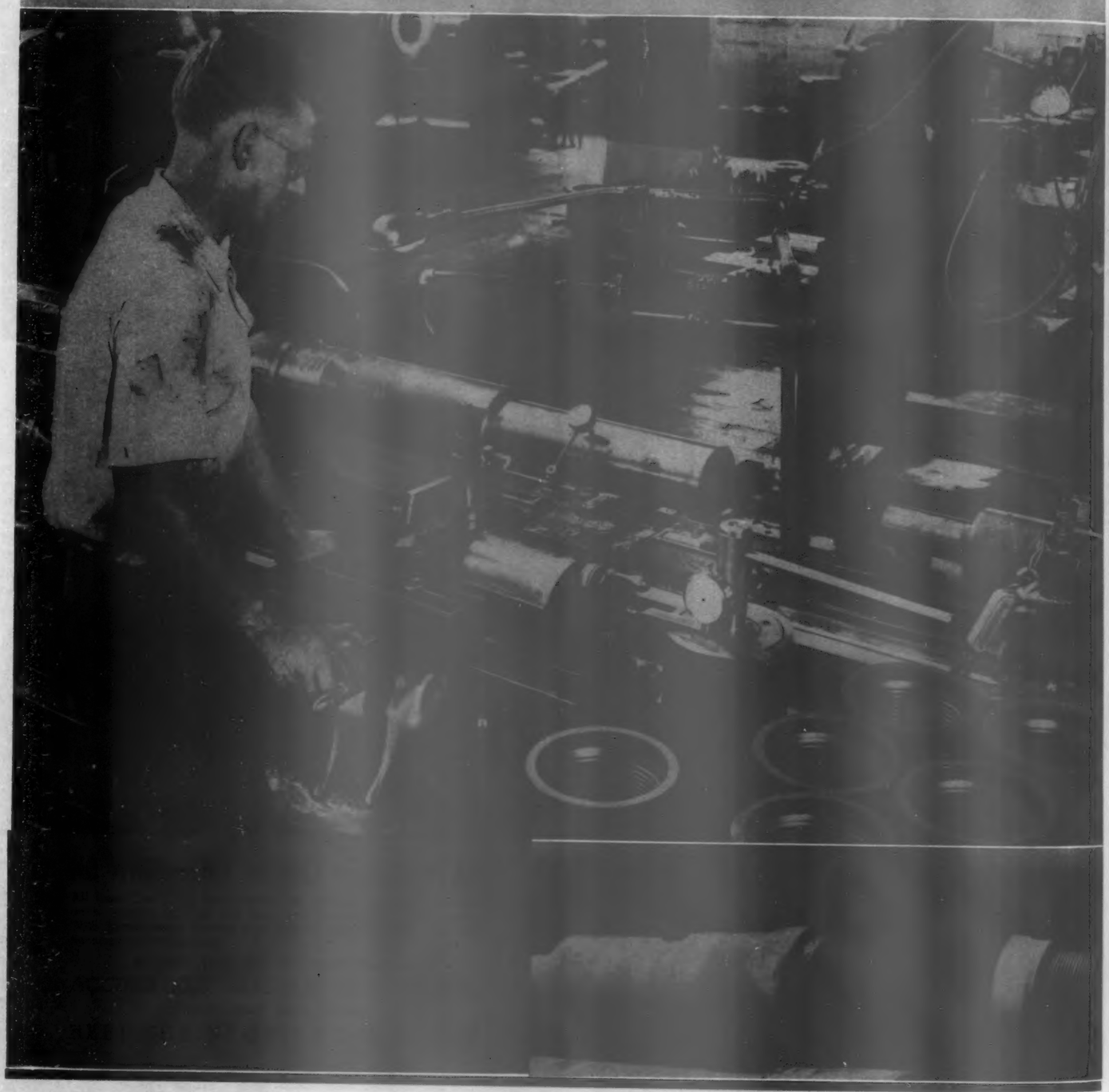

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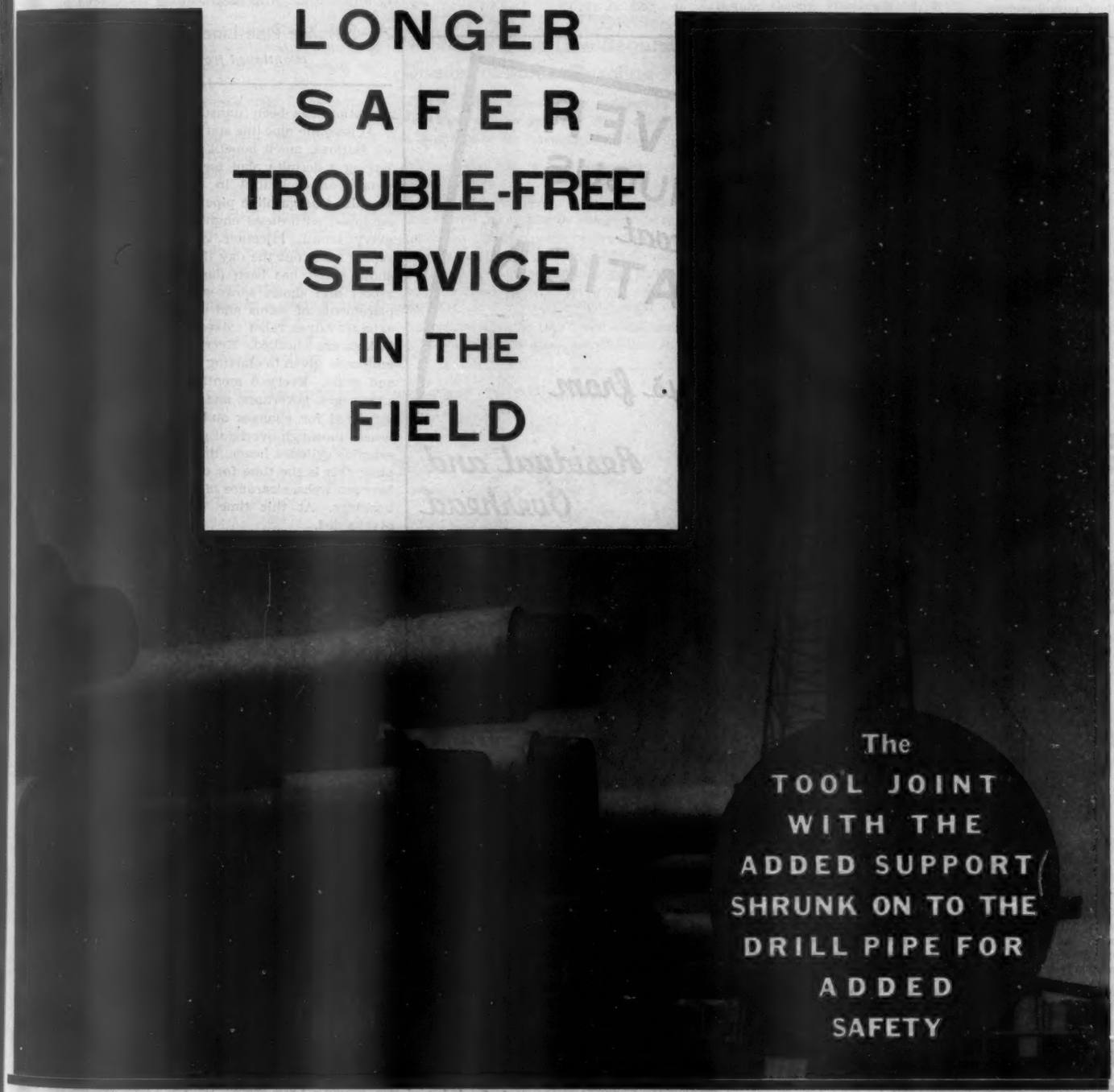

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Complex Phosphates for Deflocculation Of Drilling Muds

In an article appearing under the above title in the February 1 issue of The Oil and Gas Journal, some unfortunate typographical errors resulted in distorting the table reproduced below. The corrected formulas are here shown.

In Table 1 of the article, the heading over the third column should have read tetrasodium pyrophosphate, instead of tetrasodium phosphate. The table is here reproduced in order to clarify any possible misunderstanding.

COMMON SODIUM PHOSPHATES (Considered in their anhydrous forms)

Name—	Formula			Concentration	pH
Trisodium phosphate	Na_3PO_4	or	$3Na_2O.\ 1P_2O_5$	5%	11.5
Disodium phosphate	Na_2HPO_4	or	$2Na_2O.\ 1P_2O_5.1H_2O$	5%	8.0
Monosodium phosphate	NaH_2PO_4	or	$1Na_2O.\ 1P_2O_5.2H_2O$	5%	4.6
Tetrasodium pyrophosphate	$Na_4P_2O_7$	or	$2Na_2O.\ 1P_2O_5$	5%	8.9
Sodium metaphosphate	$NaPO_3$	or	$1Na_2O.\ 1P_2O_5$	5%	5.3
Sodium tetraphosphate	$Na_6P_4O_{13}$	or	$3Na_2O.\ 2P_2O_5$	5%	7.8

TABLE 1—EFFECT OF PHOSPHATES ON VISCOSITY

Amount phosphate added—lbs./bbl.	Funnel viscosity 500/500 seconds: Disodium phosphate	Tetrasodium pyrophosphate
0.0	46.2	52.2
0.033	46.6	
0.06		31.4
0.67	47.8	
0.133	48.0	
0.15		24.2
0.20	52.2	
0.366	56.8	
0.534	58.2	
0.58		21.6
0.7	60.6	

It should also be mentioned that the cutlines under the two graphs were transposed, so that what was labeled Fig. 1 should have read Fig. 2, and what was labeled Fig. 2 should have read Fig. 1.

Maintenance and Operating Problems At Gasoline Pipe-Line Stations

(Continued from Page 73)

sumption has been unusual.

At gasoline pipe-line stations as well as at crude-oil stations, much benefit has been derived from having a definite plan for atending to operating details on each unit in rotation at certain intervals. One gasoline pipe line operating stations equipped with diesel engines plans work so that every month injection valves are checked; a report made out the day this overhauling is done shows what has been done to the valves; this report also shows spray-valve clearance, and replacements of stems and seats. Every 2 months exhaust valves, relief valves, fuel pump, and water jackets are checked. Every 3 months special attention is given to starting valves, pump bearings and gears. Every 6 months intake valves, pressure gages, governors, and circulating pumps are inspected for changes and adjustments. Once a year a thorough overhaul gives an opportunity to examine cylinder heads, liners, pistons, and wrist pins; this is the time for checking measurements between webs, clearance of bearings and wrist-pin bushings. At this time the air compressor is overhauled.

Increasing interest has been shown by engineers of gasoline pipe lines in the nondestructive magnetic dust method for discovering invisible cracks and defects.

Engineers and superintendents in charge of pipe-line stations have found from long experience that keeping buildings and grounds neat, clean, and attractive is an important factor which contributes to effective maintenance of equipment in an intangible way which is of much importance in obtaining efficient and economical operation.

Iowa Chain-Store Tax on Bulk Plants to Be Paid

DES MOINES, Iowa.—Iowa State Tax Commission officials said 14 oil companies had agreed to pay 5 years of accumulated chain-store taxes amounting to $600,000 on bulk plants maintained in this state.

The consent decree in the federal court case has been signed by one judge and needs the approval of two other Circuit Court judges to become final.

The decree says: "Each and all of said bulk plants owned or held under lease . . . constitute 'stores' within the meaning of the chain-store act . . . in all cases where the (petroleum) products were delivered directly to consumers or users for purposes other than resale."

In a 1935 petition to enjoin the state from collecting the tax the companies had contended that the bulk plants were instruments of interstate commerce and therefore were not subject to the levy.

The companies involved are: Standard Oil Co., Barnsdall Refining Corp., Skelly Oil Co., Cities Service Oil Co., Continental Oil Co., Deep Rock Oil Corp., Mid-Continent Petroleum Corp., National Refining Corp., Phillips Petroleum Co., Shell Petroleum Corp., Sinclair Refining Co., Socony-Vacuum Oil Co., Texas Co. and Champlin Refining Co.

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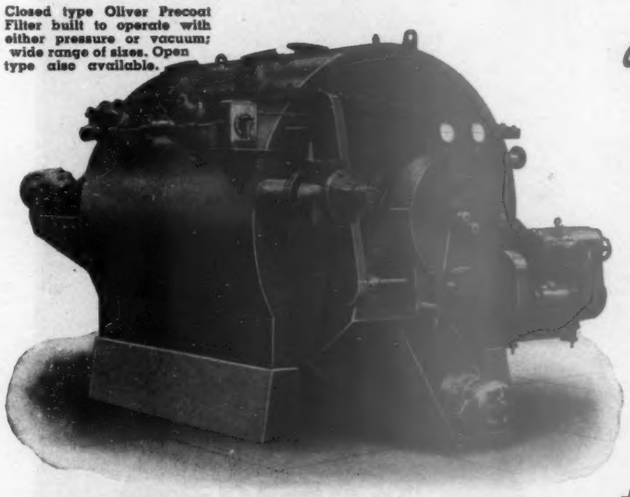
Closed type Oliver Precoat Filter built to operate with either pressure or vacuum; wide range of sizes. Open type also available.



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QUESTIONS ON TECHNOLOGY

By Charles K. Francis, Ph. D., Technical Editor

Temperature Gradients Related To Bottom-Hole Temperatures

What is the proper figure to use when estimating the temperature of the earth, such as one may use for finding bottom-hole temperatures?—N. S. D.

It appears from the many observations reported that there is no uniform temperature gradient that is true for all depths that are within the range of the holes drilled for oil or gas. Many of the wells in the East Texas field show a temperature gradient above 1° F. for each 100 ft., but in the salt-dome districts of both Texas and Louisiana the gradients are frequently found in the neighborhood of 1° F. per 50 ft. and there are many in the range of 20 to 30 ft. for 1° F.

C. E. Van Orstrand and H. C. Spicer have investigated this subject and furnished much of the reliable data. One very interesting observation, which Van Orstrand has definitely demonstrated, is that temperatures at the tops of folds are greater than on the flanks. In a well at Thermopolis, Wyo., the high gradient of 1° F. for 20 ft. was recorded, and the very low of 1° F. to 180 ft. in a Gray County, Texas, well.

ESTIMATED TEMPERATURES IN WELLS AND FOR 212° F. DEPTH

State—	No. of areas computed	Constants: Computed annual mean temperature just beneath surface of earth in °F. (a)	Geothermal gradient °F. per ft. (b)	Computed: Avg. temp., °F. At 5,000 ft. (y)	Computed: Avg. temp., °F. At 10,000 ft. (y)	Depth to 212° F. (ft.)	Per cent of wells which reach 212° F. at less than 10,000 ft.
California	11	68.3	0.0197	167	265	8,918	91
Colorado	4	51.4	0.0205	154	256	7,950	100
Louisiana	8	65.0	0.0245	188	310	6,050	100
Oklahoma	27	59.7	0.0185	152	245	9,196	74
Texas	43	67.2	0.0185	160	252	9,216	72
Wyoming	12	48.5	0.0275	185	321	6,766	100

Values are arrived at by measuring the hole temperatures and extending to greater depths by making use of the straight-line equation:

$$y = a + bx$$

Where:

y = extrapolated temperature value at greater depth
a = computed mean annual temperature in degrees F. just beneath the surface of the earth
b = the geothermal gradient in degrees per foot
x = depth for which temperature is to be calculated

Observed usually exceed maximum calculated temperatures.

Examples of temperatures encountered in several wells located in different parts of the United States are given in the table.

OBSERVED BOTTOM-HOLE TEMPERATURES IN DIFFERENT OIL FIELDS

Field—	Depth (Ft.)	Temperature observed °F.
California:		
Kettleman Hills	8,000	260
Huntington Beach	4,000	156
Texas:		
Tomball	5,550	182
Aanahuac	7,100	178
East Texas	3,600	148
Louisiana:		
Long Lake	5,250	175
Rodessa	6,000	194
Bunkie	5,700	166
Oklahoma:		
Lucien	5,000	145
Sasakwa	4,110	138
Fish	4,150	142

References: J. A. McCutchin, "Determination of Geothermal Gradients in Oklahoma," Bulletin of Am. Assoc. Petroleum Geologists, Vol. 14, No. 5, pp. 535-57. H. C. Spicer, "Rock Temperatures and Depths to Normal Boiling Point of Water in the United States," Bulletin of Am. Assoc. of Petroleum Geologists, Vol. 20, No. 3, March 1936, pp. 270-79. C. E. Van Orstrand, "Normal Geothermal Gradient in the United States," Bulletin American Association Petroleum Geologists No. 1, 78, Jan. 1935.

Nebraska State Law Regulating Quality of Motor Gasoline

What are the specifications required by the State of Nebraska for motor gasoline? What agency of the state is in charge of the inspection?—E. R.

The following is the Nebraska definition for motor-vehicle fuels: Motor-vehicle fuels shall include and are defined as gasoline, naphtha, benzine, benzol and other oils or compounds thereof, with an initial boiling point under 200° F.; and such other volatile and inflammable liquid as may be produced or compounded for the purpose of, or as may be used for operating or propelling motor vehicles.

Gasoline must be free from water and impurities. A 100-cc. sample shall be distilled in a manner recommended by the American Society for Testing Materials, and must conform to the following specifications: Ten per cent of the sample must be distilled and recovered at not above 167° F. Recovery of 50 per cent below 284° F., and 90 per cent below 392° F. The end or dry point 437° F. maximum.

Supervision of motor-fuel inspection is in charge of the director, Department of Agriculture and Inspection, Lincoln, Neb.

Physical and Chemical Laws and Principles Used in the Petroleum Industry

MODULUS OF ELASTICITY

The stress required to produce unit strain is designated modulus of elasticity, which may be a change of length (Young's modulus); a twist or shear (modulus of rigidity or modulus of torsion), or a change of volume (bulk modulus used in reference to compressibility), expressed in dynes per square centimeter. Dimensions, the same as of stress, $(ml^{-1}t^{-2})$.

Quality of Mississippi Oil From Tinsley Pool

Would appreciate very much your showing an analysis of the crude oil from the Tinsley dome pool, Yazoo County, Mississippi.—T. E. P.

The analysis available represents Producing Co.'s No. 1 Woodruff, Sec. 13-10n-3w, Yazoo County, Mississippi. The general character of the oil is indicated in the summary as follows:

Crude oil:		
Gravity, °A.P.I.		34.3
Product by distillation:		Per cent
Gasoline		25.2
Gravity	64.8	
Octane number	40.1	
End point, °F.	385	
Kerosene		25.5
Gravity	45.4	
Flash, °F.	130	
Light gas oil		12.0
Gravity	33.4	
Heavy gas oil		9.0
Gravity	28.3	
Lubricating stock		9.4
Bottoms and loss		18.9
Fuel oil gravity	14.5	

The dtails of the analysis are:

ANALYSIS OF MISSISSIPPI CRUDE OIL, TINSLEY DOME, YAZOO COUNTY

Crude—			
Gravity, °A.P.I.			34.3
Flash, °F.			0
Vis./100° F.			55
Pour point, °F.			0
Asphalt (Holde), per cent			0.15
Sulfur (bomb), per cent			0.77
Sediment, per cent			1.4
Water, per cent			1.9
Products—			
Gas, per cent			1.53
Gasoline—		To 300° F. vap. temp.	To 400° F. vap. temp.
Yield, per cent		16.2	25.2
Gravity, °A.P.I.		72.3	64.8
Sulfur, per cent (lamp)		.022	.026
Octane (C.F.R. M.M.)		50.8	40.1
I.B.P., °F.		109	117
Per cent off at 122° F.		1.0	...
Per cent off at 140° F.		6.5	2.0
Per cent off at 158° F.		16.0	7.0
Per cent off at 212° F.		51.5	25.5
Per cent off at 257° F.		84.0	46.0
Per cent off at 302° F.		...	67.0
Per cent off at 312° F.		...	93.0
F.B.P., °F.		293	385
Kerosene—			
Yield, per cent	25.5	I.B.P., °F.	334
Gravity, °A.P.I.	45.4	10% @	364
R.O. vis.	400	50% @	435
Sulfur, % (lamp)	.081	90% @	522
Flash, °F.	130	F.B.P., °F.	550

Other products—	Light gas oil	Heavy gas oil	Lube	Bottoms
Yield, per cent	12.0	9.0	9.4	27.4
Gravity, °A.P.I.	33.4	28.3	25.0	14.5
Flash, °F.	...	...	425	565
S.U. vis./100° F.	48	98	269	...
S.U. vis./210° F.	...	...	49.3	696
Furol vis./122° F.	...	...	...	1,643
Pour, °F.	35	70	90	55
Sulfur, per cent	.53	...	1.0	1.87
Aniline point	175	185	191	...
Conradson carbon, %	...	...	...	11.78

This oil is essentially paraffinic, suitable for processing to yield light products and lubricating oils. The octane value of the straightrun gasoline is low as normally found for paraffin-base oils. This will be improved by addition of cracked gasoline and adjustment with tetraethyl lead.

Questions on Petroleum Technology may be sent to Dr. Charles K. Francis, The Oil and Gas Journal, Tulsa, Okla. When a copy of the answer is desired, postage should be included.

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FIELD OPERATIONS

Summarizing the Week's Developments

ILLINOIS—Twenty Devonian-lime wells in the Salem pool averaged 3,389 bbl. per well in initial production. Total production of the state rose to 414,446 bbl. a day but could have been much greater but for a lack of sufficient pipe-line capacity from field to refineries.

TEXAS: North Texas—A Montague County wildcat that flowed 425 bbl. in 3 hours and is rated good for 3,400 bbl. per day, is said to be the largest discovery well ever drilled in North Texas. It is producing from a pay at 5,241-49 ft. In the Chapel Hill area in Smith County, East Texas, the Trinity-sand discovery well was acidized, which increased its output to 662 bbl. per day.

West Texas—Western Hockley County may have a new pool from a pay resembling the Slaughter field upper zone. While not completed, three offsets were staked on the strength of its showing.

Gulf Coast Texas—The Anchor field in Brazoria County was extended 2,000 ft. northwesterly by a 49-gravity distillate well. The Magnet field in Wharton County was given a ¼-mile extension. A South China field, Jefferson County, north outpost, was dry, and a wildcat north of the Cedar Point field in Chambers County was a failure.

Southwest Texas—The first oil well in the Wade City distillate pool in Jim Wells County flowed 190 bbl. through a choke, from pay at 4,923-28 ft.

LA-ARK-TEX—The coastal Louisiana Tertiary Wilcox-sand production in Villa Platte, Evangeline Parish, was extended southeasterly adding several hundred potentially productive acres. A Wilcox dry hole in Rapides Parish appears certain. Deep production on the West Hackberry dome was extended by a 300-bbl. well. In Arkansas two deep Smackover-lime wildcats have been started. A Nevada County wildcat was dry in that formation.

KANSAS—The Prusa pool in Barton County was extended ½ mile eastward. An outpost east of the Otis-Albert area, Barton County, was completed as a small oil well. A wildcat between the Stoltenberg and Stratmann pools, Ellsworth County, cored saturated Arbuckle lime.

OKLAHOMA—The fifth producer was near completion in the Byars pool, McClain County. The King pool in Pottawatomie County was extended ½ mile northwestward. Wildcats were started in Garfield and Beckham counties. Largest completion of the week was a 2,877-bbl. well in the Cement field, Caddo County.

NEW MEXICO—A fourth producing horizon was opened in northern Eddy County.

MICHIGAN—The Overisel field in Allegan County led in completions with five wells ranging from 200 to 400 bbl. per day. Nineteen oil wells and only four dry holes made up the completion record of the state. Fifteen permits to drill were granted.

CALIFORNIA—An important outpost in the Slough area in Kern County, south of the Ten Section field, looks like a failure at 10,136 ft. A wildcat in the Goose Lake district, Kern County was dry at 12,144 ft., and upper zones were found barren.

Completions in All Fields

(Week Ended February 24, 1940)

	Oil	Gas	Dry	Total	1940 total comp. to date	1939 total comp. to date
N. Y., Pa., and W. Va.	59	10	3	72	605	526
Ohio	8	7	5	20	136	149
Indiana	7	0	3	10	55	23
Kentucky	4	0	3	7	54	90
Illinois	53	2	8	63	535	565
Michigan	19	1	4	24	213	166
Kansas	15	1	5	21	203	177
Oklahoma	17	2	12	31	263	260
Texas:						
North Central Texas	46	1	27	74	486	317
West Texas	27	0	3	30	372	293
Texas Panhandle	9	1	1	11	98	61
East Texas	6	0	0	6	51	145
East Central Texas	4	3	0	7	40	36
East Texas Border	1	0	2	3	9	17
Gulf Coast Texas	18	1	6	25	218	199
Southwest Texas	33	2	14	49	358	333
Total Texas	144	8	53	205	1,632	1,401
North Louisiana	2	0	4	6	85	67
Gulf Coast Louisiana	8	0	1	9	128	108
Total Louisiana	10	0	5	15	213	175
Arkansas	4	0	1	5	37	43
Montana	1	0	0	1	26	19
Wyoming	1	0	0	1	28	16
Colorado	0	0	0	0	5	1
New Mexico	13	0	2	15	123	99
California	11	1	3	15	171	149
Total United States	366	32	107	505	4,299	3,859
Total previous week	320	44	82	446		
Week ended Feb. 25, 1939	267	17	85	369		

Outstanding Fields—Highlights

(Week Ended February 24, 1940)

FIELD—	Rigs up	Wells drlg.	Weekly oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
TEXAS						
K.M.A.	24	41	7	3,297	1,270	41,496
Wasson-Bennett	27	81	6	6,126	668	38,827
Ector County	12	67	12	11,267	1,989	47,397
Pecos County	9	20	3	369	1,291	29,100
Jones County	13	20	7	1,374	587	8,100
East Texas	9	14	6	231	26,037	397,348
OKLAHOMA						
St. Louis	5	31	1	535	927	32,150
Cement	7	24	1	479	289	6,610
KANSAS						
Barton County	5	20	5	2,417	478	12,680
Ellis County	6	21	2	596	489	12,470
Rice County	4	20	1	750	1,432	29,300
Russell County	8	24	2	941	1,477	34,200
NEW MEXICO						
Lea County	7	45	6	2,964	2,380	97,490
Eddy County	16	53	7	3,899	517	15,810
LA-ARK-TEX						
Cotton Valley, La. (deep)	0	5	0	0	153	14,520
Magnolia, Ark.	0	6	3	1,300	93	19,430
MICHIGAN						
Freeman-Redding	3	9	2	437	143	14,391
Kent County	6	26	5	400	279	17,846
CALIFORNIA						
Montebello	0	14	2	1,270	348	24,050
ILLINOIS						
Salem	15	137	24	68,376	1,667	258,015
Louden	3	44	11	2,688	1,343	76,388
Other basin fields	30	220	18	3,464	3,467	70,713
Old fields	...	...	...	...	...	9,330
MISSISSIPPI						
Tinsley pool	2	5	0	0	22	7,300

Salem's Devonian Lime Wells Show Large Initial Production

By STAFF CORRESPONDENT

OLNEY, Ill., Feb. 26.—Production in Illinois mounted to an average of 414,446 bbl. per day in the week ended February 26. Twenty Devonian-lime wells were completed in the week in review in the Salem field alone, yielding an average initial 24-hour production of 3,389 bbl. per well. The Salem field produced 258,015 bbl. per day last week; Louden 76,388 bbl., and other basin fields 70,713 bbl. The old fields in the state yielded 9,330 bbl.

The production for the week is far below the potential production of the state. Illinois, if not already a greater potential producer than Oklahoma, is crowding that state closely, and will soon, without question, rank third among the producing states in the union.

Fifty-three oil wells were completed in the state during the week with initial production of 74,528 bbl. There were eight dry holes and two gas wells. Twenty-four of the new oil wells were completed in the Salem field and 11 in the Louden field.

Salem's 24 new wells had a total initial production of 68,376 bbl. Louden's 11 wells produced 2,688 bbl. initially and 1 well in the St. James pool in Fayette County started at 112 bbl. Three Clinton County Devonian completions in the west side of the Centralia field produced 1,441 bbl.; 1 well in Jefferson County, 94 bbl.; 2 in Richardson County, 782 bbl.; 4 in Wabash County, 198 bbl.; 1 in Edwards County, 110 bbl.; 5 in White County, 838 bbl.; 1 in Clay County, 180 bbl. The 8 dry holes were 1 each in Clark, Crawford, Brown, Edwards, White, Pike, McDonough and Bond counties. Lawrence County had 2 gas wells. About 70 wells have been completed in the Devonian lime in the Salem field.

More than a dozen new Devonian-lime tests were announced for the Salem field and 15 Devonian wells were listed as new operations in the Centralia field in Clinton and Marion counties.

The Centralia townsite Devonian lime was extended 5 blocks eastward to a point close to the Illinois Central tracks by J. W. Menhall's No. 10 Illinois Central, bottomed at about 2,910 ft. The well had not yet been completed but was showing for a producer. In the northeastern end of the townsite Algona Oil Co.'s No. 1 Fortney was also indicating production in the Devonian. Louis Lilly's outpost in the northwestern part of the county was estimated to be good for 2,000 bbl. a day in its incomplete state which would make it the largest well in the Centralia field.

Following is the completion report for the week, the initial production representing 24 hours unless otherwise given:

Marion County

Twenty wells were completed in the Devonian lime in the Salem field in Marion County, with a total potential production of 67,744 bbl. per day. Magnolia Petroleum Co.'s No. 30 W. B. Young, SW SW NE Section 20-2n-2e, had Devonian top at 3,317 ft., pay at 3,362 ft., total depth 3,417 ft., acidized with 5,000 gal., flowed 1,200 bbl. per day. Magnolia's No. 32 W. B. Young, SE SW NE Section 20, Devonian top at 3,319 ft., pay at 3,393 ft., total depth 3,416 ft., acidized with 5,000 gal., flowed 2,520 bbl. a day. Ohio Oil Co.'s No. 18 M. J. Young, NE SE NW Section 20, Devonian top at 3,340 ft., pay at 3,382-2,435 ft., total depth 3,345 ft., acidized with 5,000 gal., flowed 1,873 bbl. a day. Shell Oil Co., Inc.'s No. 3-C Salem State Bank, NE SW SE Section 20-2n-2e, Devonian top at 3,315 ft., pay at 3,390 ft., total depth 3,420 ft., acidized with 5,000 gal., flowed 1,450 bbl. per day. Shell's No. 2-C Young heirs, NW NE SE Section 20, Devonian at 3,330 ft., pay at 3,385-3,422 ft., acidized with 5,000 gal., flowed 3,904 bbl. Shell's No. 4-C Young heirs, SW NE SE Section 20-2n-2e, Devonian at 3,329 ft., pay at 3,401-20 ft., total depth, acidized with 5,000 gal., flowed 5,791 bbl. a day. Shell's No. 5-C Young heirs, NW cor. SE SE Section 20, Devonian at 3,322 ft., good pay at 3,400-20 ft., total depth, acidized with 5,000 gal., flowed 1,896 bbl. Shell's No. 4-C Salem State Bank, SE SW SE Section 20, Devonian at 3,317 ft., pay at 3,385-3,410 ft., total depth 3,419 ft., flowed 900 bbl. in 12 hours, naturally, acidized with 5,000 gal., flowed 3,446 bbl. per day. Shell's No. 15-C Young heirs, SE cor. SW SE SE Section 20-2n-2e, Devonian at 3,336 ft., total depth 3,420 ft., acidized with 5,000 gal., flowed 2,889 bbl. per day Texas Co.'s No. 7-A Sweney, SE NE NW Section 20, Devonian at 3,362 ft., pay at 3,409 ft., total depth 3,455 ft., acidized with 2,000 gal., flowed 770 bbl. Lad Oil Co.'s No. 4 Young Church, SW cor. NW¼ Section 21-2n-2e, old total depth 3,456 ft., deepened to 3,465 ft. and acidized with 5,000 gal., flowed 629 bbl. a day through 2½-in. tubing. Magnolia Petroleum Co.'s No. 77 J. H. Young, NW cor. SW¼ Section 21, Devonian at 3,379 ft., pay at 3,428-65 ft., total depth, acidized with 5,000 gal., flowed 1,034 bbl. Magnolia's No. 80 J. H. Young, SW SW NW Section 28-2n-2e, Devonian at 3,333 ft., pay at 3,399-3,420 ft., acidized with 5,000 gal., flowed 3,931 bbl. Magnolia's No. 37 S. Shanafelt, SE SW SW Section 29-2n-2e, Devonian at 3,261 ft., pay 3,333-47 ft., total depth, acidized with 5,000 gal., flowed 625 bbl. in 3 hours, rated at 5,010 bbl. a day. Magnolia's No. 20 J. R. Young, SW SW NE Section 29, Devonian top at 3,329 ft., pay at 3,394 ft., 5,000 gal. of acid, flowed 6,264 bbl. a day. Magnolia's No. 22 J. R. Young, NE NW NE Section 29, Devonian at 3,323 ft., pay at 3,397-3,416 ft., 5,000 gal. of acid, flowed 3,744 bbl. W. C. McBride, Inc.'s No. 19 Lee, NE NE SE Section 29, Devonian at 3,320 ft., pay at 3,391-3,414 ft., total depth, 6,000 gal. of acid, flowed 3,438 bbl. Texas Co.'s No. 23 W. Friederich A, NE SW SW Section 29, Devonian 3,305 ft., pay 3,339 ft., total depth 3,390 ft., 5,000 gal. of acid, flowed 5,292 bbl. Texas Co.'s No. 15 Shanafelt, NE NE NE Section 29, Devonian 3,333 ft., pay 3,354-3,425 ft., 5,000 gal. of acid, flowed 4,788 bbl. Texas Co.'s No. 5 Telford, NE SE NE Section 29, Devonian 3,348 ft., pay 3,393-3,455 ft., 5,000 gal. of acid, flowed 6,048 bbl. Wiser Oil Co.'s No. 10 Weems, NW NW NW Section 33-2n-2e, Devonian 3,367 ft., pay 3,434-48 ft., 5,000 gal. of acid, flowed 2,456 bbl.

Only four wells were completed in the Salem field in pays other than Devonian lime. Operators in the past few weeks have passed up the upper pays if they are in the area where Devonian is known to produce. In the past week Texas Co.'s No. 2 Wallis, NE NE SE Section 19-2n-2e, drilled to 2,127 ft., and plugged back to 2,119 ft., and acidized with 1,000 gal., and has a 28-bbl. well. Benoist sand was topped at 1,928 ft. Texas Co.'s No. 13 Kleinschmidt, C E½ SW NE Section 28-2n-2e, McClosky pays at 2,008-11 ft. and 2,063-72 ft., pumped 119 bbl. per day. Texas Co.'s No. 24 W. Friederich A, SE SE NE Section 30-2n-2e, McClosky at 2,004-10 ft., total depth 2,086 ft., pumped 245 bbl. a day. Texas' No. 14 Stonecipher, SE cor. NW SW SE Section 32-2n-2e, McClosky at 1,975-2,028 ft., at intervals, pumped 210 bbl.

In the Centralia field on the Clinton County side, Paul Doran's No. 1 Rothemeyer, SE NE SE Section 13-1n-1w, had Devonian lime at 2,860 ft., pay at 2,897-2,905 ft., total depth, treated with 3,000 gal., flowed 250 bbl. per day. Johnston & Burnham's No. 1 Heiss B, NW cor. SE NE SE Section 13-1n-1w, Devonian top at 2,860 ft., pay at 2,901-07 ft., total depth, acidized with 1,000 and 2,000 gal., flowed 251 bbl. Jones & Deaton's No. 1 Bell, NW cor. SE NE Section 13-1n-1w, Devonian at 2,868 ft., pay at 2,908-14 ft., 3,000 gal. of acid, flowed 940 bbl.

In Jefferson County Alma Oil Co.'s No. 1 Gossett, NW SE NE Section 16-1s-2e, Benoist at 1,934-39 ft., shot with 5 qt., pumped 94 bbl. Gilson & Jennings lost the hole at No. 1 Charles Hall, NE SE NW Section 36-2s-1e, at 1,250 ft. and junked and abandoned the operation.

In Clark County Kingwood Oil Co. drilled a Devonian-lime dry hole in No. 1 Booth-Poorman, SW NW NE Section 17-11n-14w, Devonian was topped at 1,217 ft., total depth 1,325 ft. It had no showings at any depth. St. Louis lime was topped at 310 ft.

Fayette County

In the Louden field in Fayette County Minerva Oil Co. deepened No. 4 Tish, SE NW SE Section 33-8n-3e, from 1,525 ft. to 1,600 ft., and the well pumped 56 bbl. in 8 hours without a shot. Carter Oil Co.'s No. 3 Ina Howell, SW SW NW Section 15-8n-3e, shot with 20 and 20 qt. at 1,514-23 ft., swabbed 270 bbl. a day through casing. Carter's No. 1 Tipsword, NW SW NW Section 22-8n-3e, shot with 20 and 20 qt., flowed 120 bbl. a day. Six-inch casing set at 1,557 ft., total depth 1,572 ft. Carter Oil Co.'s No. 3 McClain, NE SE SE Section 32-8n-3e, shot with 30 and 25 qt., flowed 528 bbl. a day. Pipe set at 1,561 ft., total depth 1,578 ft. Carter's No. 4 F. Durbin, NE NE NE Section 4-7n-3e, shot with 10 and 30 qt., swabbed 168 bbl. of oil and about 5 bbl. of water per day; 6-in. at 1,578 ft., total depth 1,590 ft. Carter's No. 8 O. McClain, NW NW NW Section 5-7n-3e, shot with 15 and 60 qt., swabbed 972 bbl. of oil per day; 6-in. casing at 1,548 ft.; total depth 1,566 ft. Carter's No. 4 Ramsey-Leavey, SE NW SE Section 5-7n-3e, shot with 10 and 10 qt., swabbed 330 bbl. a day; 4½-in. liner set at 1,476-82 ft., total depth. Carter's No. 13 Durbin, SE NE NE Section 8-7n-3e, shot with 30 and 30 qt. at 1,493½-1,503 ft., total depth 1,566 ft., swabbed 78 bbl. a day. Shell Oil Co., Inc.'s No. 3-A Harper B, NE SE NE Section 18-7n-3e, shot with 25 qt. in Cypress sand at 1,500-24 ft., total depth, pumped 42 bbl. a day. Wilson & Markham's No. 4 Rhodes, NE SW SW Section 18-7n-3e, Cypress sand at 1,517-40 ft., total depth, shot with 25 qt., pumped 54 bbl. in 6 hours. Minerva Oil Co.'s No. 6 Richardson, SE NE NW Section 21-7n-3e, Cypress sand at 1,550-70 ft., shot with 6 qt., pumped 76 bbl.

In the St. James pool in Fayette County, Texas Co.'s No. 1 Chrisman, SW cor. NE NE NW Section 7-6n-3e, Cypress sand at 1,567-81 ft., pumped 112 bbl. a day without a shot.

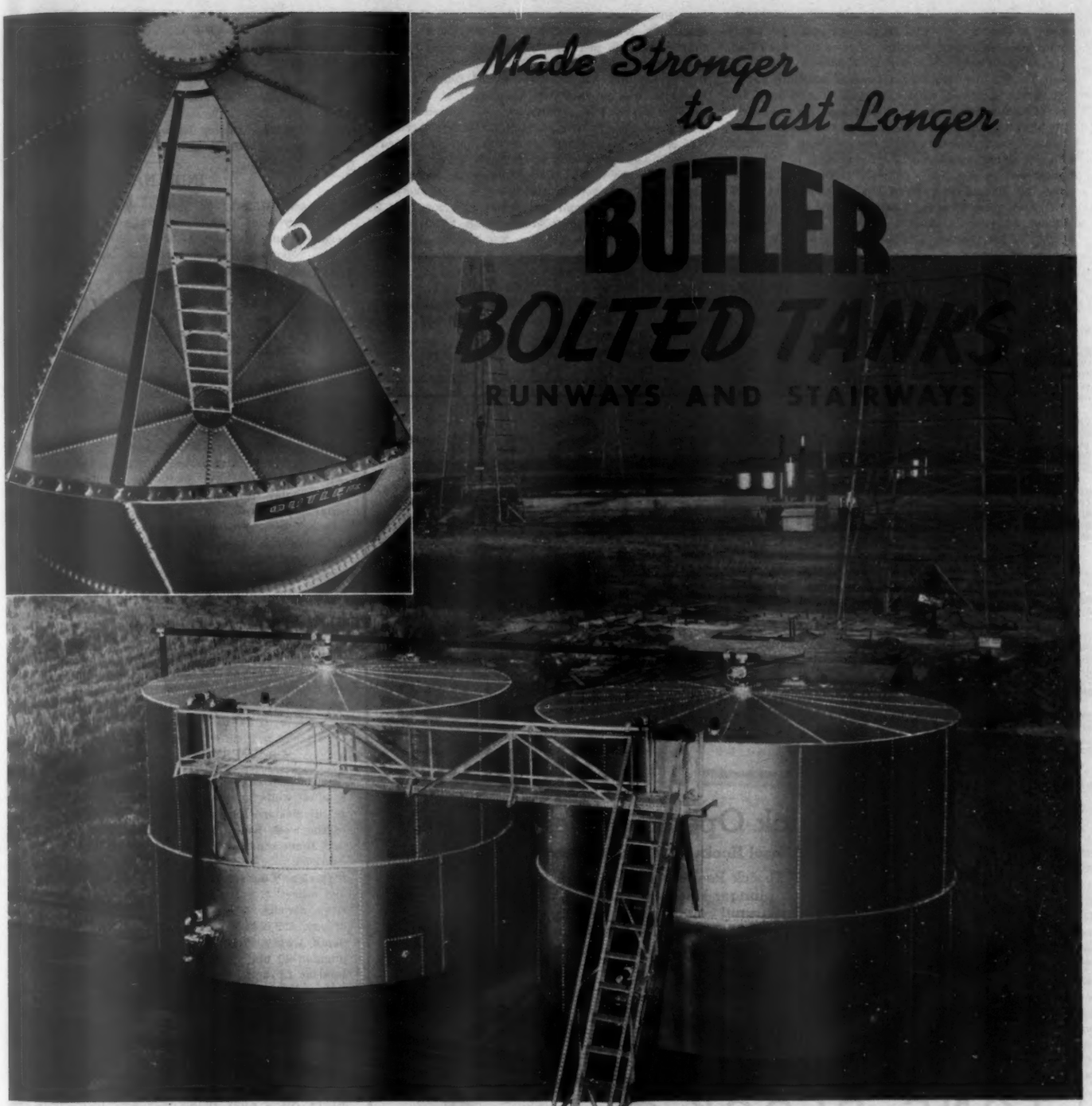
In Crawford County Denver Producing & Refining Co.'s No. 1 Dennis, a Devonian-lime test, in SW SW NW Section 14-7n-14w, was dry and abandoned at 3,504 ft. Devonian was topped at 3,205 ft.

In Richland County Pure Oil Co.'s No. 5 G. B. Murray A, N½ SW NE NW Section 6-4n-10e, had Fredonia-lime pays at 2,817-20 ft. and 2,823-31 ft., total depth 2,880 ft., flowed 544 bbl. a day, naturally, through 1-in. choke.

In Brown County F. M. Coleman's No. 1 Newenham, SW cor. NW NE SE Section 7-2s-3w of fourth principal meridian, topped Niagara lime at 640 ft. and found it dry to 730 ft., where the hole was abandoned.

In Wabash County W. M. Bartlett's No. 5 Gray, NE NW SW Section 29-2s-13w, North Griffin pool, had Cypress sand at 2,465-76 ft., and it made a 73-bbl. pumper after a shot of 20 qt. Continental Oil Co.'s No. 3 Albert Gray, SE SE SW Section 20-2s-13w, had Ste. Genevieve-lime top at 2,750 ft., total depth 2,836 ft. It pumped 62 bbl. in 12 hours without shot or acid. Tide Water Associated Oil Co.'s No. 1 C. M. Batson, NW cor. NE SW Section 29-2s-13w, had Cypress sand at 2,471-81 ft., shot it with 5 qt., and is a 38-bbl. pumper. In the Heston pool Longhorn Oil Co.'s No. 5 Heil, NW SW SW Section 7-3s-13w, drilled to 2,895 ft., in McClosky lime, but plugged back to 2,135 ft. where it made a 25-bbl. well.

In Edwards County Roger Lacey's No. 3 Bump, SE SE SW Section 34-2s-14w, Cowling pool, had Cypress sand at 2,625-44 ft., shot with 20 qt. it made a 110-bbl. pumper. Kingwood Oil Co.'s No. 1 Frost, SE NE NE



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Section 8-3s-14w, was dry and abandoned at 3,151 ft., on top of the St. Louis lime. It penetrated all the sands found in other counties but they showed no signs of oil.

In White County Schlafly & Damron's No. 1 M. Cosh, SE NW SW Section 9-3s-9e, had Rosiclare pay at 3,402-07 ft. Acidized with 4,000 gal., it produced 130 bbl. in 7 hours on the pump. New Penn's No. 1 Walker, C W½ W½ SW NW Section 16-3s-9e, had Fredonia pay at 3,404-09 ft., and after a 2,000-gal. acid treatment pumped 10 bbl. of oil and 15 bbl. of water in 24 hours. Spiller and others' No. 1 Gill, NE NE SW Section 20-3s-8e, Mill Shoals pool, found Aux Vases sand at 3,218-75 ft. Shot with 30 qt. at 3,223-36 ft., the well pumped 209 bbl. in 24 hours. Eason and others' No. 1 N. Storms E, SE NE SE Section 15-6s-9e, Storms pool, Waltersburg sand at 2,227 ft., pay at 2,244-58 ft., pumped 297 bbl. in 21 hours. Eason's No. 3 N. Storms, SE SE SE Section 15, Waltersburg sand at 2,243-60 ft., flowed 192 bbl. of oil and 20,000,000 cu. ft. of gas in 24 hours. Carl Robinson's No. 1 Randolph heirs was dry and abandoned at 3,131 ft., Fredonia lime was topped at 3,077 ft.

In Pike County West Pike Development Co.'s No. 1 Reinhardt, NW cor. NE NW NE Section 35-4s-7w of fourth principal meridian, was abandoned at 114 ft.

In McDonough County R. G. Rigland's No. 1 Roberts, C N½ SW SW Section 18-6n-4w of fourth principal meridian, was plugged and abandoned at 740 ft. Maquoketa lime (Upper Ordovician) was topped at 735 ft.

In Bond County R. F. Anderson's No. 1 Morris, NW NW NW Section 16-6n-3w, was dry and abandoned at 1,200 ft. Aux Vases sand was topped at 980 ft.

In Lawrence County Bowman's No. 2 Lawless, SW cor. NE SE SW Section 18-4n-10w, is a 500,000-cu. ft. gasser. Bridgeport sand was topped at 772 ft. and Buchanan sand at 1,030 ft., total depth 1,125 ft. R. R. Willis' No. 2 Givium, SW cor. NW SE NE Section 18-4n-10w, Buchanan sand at 1,050 ft., total depth 1,142 ft., 500,000 cu. ft. of gas.

In the Noble pool in Richland County, Pure Oil Co.'s No. 11 Montgomery B, NW NW NW Section 4-3n-9e, Cypress-sand pay at 2,581-92 ft., pumped 238 bbl. per day without a shot.

In the Clay City pool in Clay County, Pure Oil Co.'s No. 3 N. Rogers, C N½ SW NW Section 30-2n-8e, Fredonia-lime top at 3,018 ft., total depth 3,097 ft., acidized with 5,000 gal., pumped 189 bbl. a day.

New Operations

New wildcat operations first reported include the following:

In Lawrence County La Salle Oil Co.'s No. 1 Wright,

(Continued on Page 102)

INDIANA

EVANSVILLE, Ind., Feb. 26.—Seven oil wells and three dry holes were reported as completions in southern Indiana in the past week. Two new operations were reported. Most of the wildcats in the state are shut down because of bad weather.

In Sullivan County Niagaran Oil Co. is reported to have abandoned No. 6 Riley, NW NE NW Section 33-8n-10w, at 587 ft.

In Posey County Superior Oil Co.'s No. 2 Mumford, SW SE NW Section 31-3s-13w, was dry and abandoned at 2,716 ft. J. S. Roberts' No. 1 Keck, C N½ N½ NW Section 34-3s-14w, shot with 20 qt. at 2,779-89 ft., pumped 56 bbl. in 13 hours.

In Gibson County Continental Oil Co.'s No. 2 Thrash, 176 ft. from north and 2,116 ft. from east lines of SW¼ Section 18-3s-13w, shot with 40 qt. at 2,492-2,508 ft., pumped 67 bbl. in 2 hours. W. F. Lacey's No. 1 Dunn, SW cor. NW SE SW Section 18-3s-13w, pumped 112 bbl. per day from sands at 2,509-17 ft. and 2,071-94 ft., after a 20-qt. shot in the deeper pay. Fotiades and others' No. 1 Fleener, SE NW SE Section 21-3s-12w, acidized with 3,000 gal. at 2,706-14 ft., swabbed and flowed 14 bbl. per hour. It was shut in for tankage. Midwest Development Co.'s No. 2 Beatty, SE SE NW Section 15-2s-9w, drilled to 1,685 ft., was acidized with 1,000 gal., but it showed no commercial production and was abandoned. Ste. Genevieve lime was topped at 1,543 ft.

In Spencer County two near completions were reported. O. L. Sturborse and others' No. 1 Boyd, C NE NE Section 31-7s-6w, had sand at 915-18 ft. and 650,000 cu. ft. of gas. Deepened to 930 ft. it flowed about 8

(Continued on Page 87)

WESTERN KENTUCKY

OWENSBORO, Ky., Feb. 26.—Seven completions, four oil wells, and three dry holes, summed up results in the western Kentucky field last week. The best well of the week was a 125-bbl. initial producer from Jett and Jones sands in Daviess County. Following are the details:

Daviess County, Handyville district: A. D. Shaffer and others' No. 2 Mort Fulkerson, location abandoned. Utica district: Wanna Oil Co.'s No. 2 L. & N. right-of-way, 125-bbl. well in Jett and Jones sands, total depth 1,235½ ft. C. E. Daugherty's No. 3 J. A. Leet, pumped 40 bbl. in 8 hours after deepening from Jett sand at 1,072 ft. through Jones sand, to 1,235 ft., and shooting with 60 qt. C. E. Daugherty's No. 2 Rex O'Flynn, drilled deeper from Jett sand, 1,087 ft. through Jones sand, total depth 1,209 ft.; shot with 60 qt.; now testing. Red Hill district: Cobb and others' No. 6 James Tinsley, 10-bbl. well in Jett sand, total depth 947 ft.

Hancock County, Patesville district: C. H. Krysl and others' No. 2 Ebby Boling, dry hole through Jackson sand, total depth 635 ft.

Henderson County, Corydon district: Sun Oil Co. and Kentucky Natural Gas Co.'s No. 3 Corydon unit, drilled McClosky at 2,596-2,603 ft.; 5½-in. casing set at 2,596 ft.

McLean County, Island district: South Penn Oil Co.'s No. 8 H. K. Kirtley, 35-bbl. well in Jett sand, total depth 1,446 ft.

Ohio County, Horton district: P. Evans and others' No. 1 S. Foster, dry hole at 478 ft. Fordsville district: Hunt & Miles' No. 1 P. Miles, drilled Jett sand to 270 ft., total depth 325 ft.; shut down for shot. Sunnydale district: J. Hunt's No. 2 Charles Russell, dry hole at 350 ft.

EASTERN KENTUCKY

ASHLAND, Ky., Feb. 26.—Drilling operations moved forward last week with the Kentucky-West Virginia Gas Co. in the spotlight.

The Kentucky-West Virginia Gas Co. made a location for No. 586 on the Levi Mitchell land on Mitchell Branch of Mud Creek; No. 5262 on the W. R. Hall, Jr., tract on Jacks Creek of Left Beaver, and No. 5263 on the James Sturgill land on Keathley Branch of Toler Creek, all in Floyd County.

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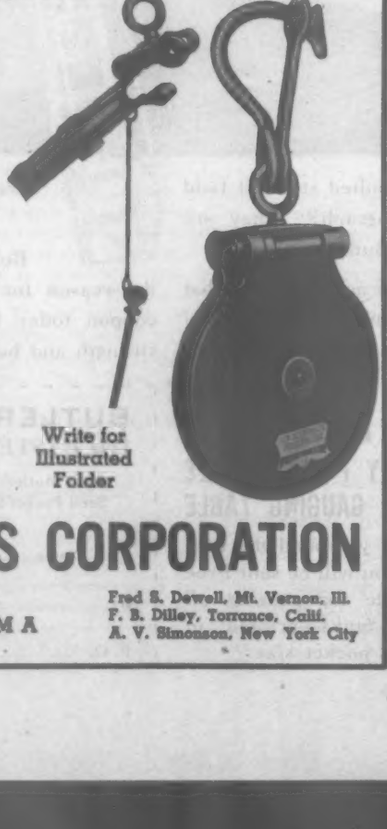

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California Field Report

By L. P. STOCKMAN

Important Kern County Test Is a Dry Hole at 10,136 Feet

LOS ANGELES, Calif., Feb. 26.—Richfield Oil Corp., in the Slough area of Kern County, south of the eastern tip of the Ten Section field, had 1 ft. of good oil sand in the bottom of the core barrel, but another core showed nothing but gray sand and thus practically removed this wildcat from the list of promising exploratory wells. When this showing was cored it was generally believed that this relatively thin streak marked the top of the Stevens sand and that the main body might be picked up with additional depth but late in the week when the bit had reached 10,136 ft. all hope of finding commercial production was given up. The prevailing formation at present is a shale and while the company will probably continue drilling in the hope of finding a formation break quickly it is not likely that this well will be carried down for more than another 250 ft. unless it is decided to take a look at the Vedder and Rio Bravo sands which are productive in this general area. To go down to these two additional sands will require the drilling of a hole to at least 12,000 ft. and since the Stevens sand was found so low it is not likely that Richfield will drill ahead to the other zones. The well is No. 1 K.C.L. Slough James in Section 6-31-26. The formation broke from a hard sandy shale body at 9,970 ft. and went into the Stevens sand at 9,978 ft. The first core taken at 9,987 ft. showed 2 ft. of siltstone, 2 ft. of gray sand and 1 ft. of oil sand. Subsequent drilling found the remainder of the Stevens sand body to be barren as is the shale body at 10,136 ft.

Current daily production of leading California fields follows:

	Barrels
Wilmington	81,750
Kettleman Hills	54,525
Midway-Sunset	45,025
Long Beach	44,400
Ventura Avenue	35,125
Huntington Beach	28,150
Santa Fe Springs	26,250
Montebello	24,050
Santa Maria Valley	11,010

Rio Bravo

For the second consecutive week drilling operations in the Rio Bravo have resulted in the finding of the top of the Rio Bravo zone at a higher point structurally. Two weeks ago Superior Oil Co. cored top of the productive Rio Bravo zone in No. 1 Roe, Section 27-28-25, at 11,157 ft., which placed the well as the highest structurally in the field. Last week Superior Oil Co. found top of the Rio Bravo zone in No. 1 Rudnick, Section 28-28-25, at 11,145 ft. Top of the main body of Rio Bravo oil sand is slightly below top of the zone. No. 1 Rudnick is the most westerly well drilled in the Rio Bravo field and indicates that the productive limits at this point will be at least 1 mile wide. The northern limits of production are still undetermined, but contours based on top of the Rio Bravo zone indicate that the field will extend another mile unless faulting occurs. In addition to No. 1 Roe and No. 1 Rudnick, Superior Oil Co. has a derrick up for No. 2 Weber, Section 27-28-25, and a derrick standing and location staked for Nos. 2 and 3 on the Smith property in Section 34-28-25. In Section 34-28-25 Union Oil Co. is putting the finishing touches on No. 21-34 Kern County Land, which blew out several weeks ago and is making good progress in No. 26-27 Kern County Land in Section 27-28-25. No. 32-24 Kern County Land is scheduled to be spudded in within the next few days as rotary drilling equipment has just about been rigged up.

Deep Wells

The development of crude-oil production at great depths has become so commonplace that 10,000 and 11,000-ft. wells mean very little from a drilling standpoint. There are 19 wells in California fields below 10,000 ft., all in the San Joaquin Basin. The deepest drilling well is No. 52-2-13-A Kern County Land of Shell Oil Co. in the San Emidio area in Section 13-11-22 at 13,692 ft. Continental Oil Co.'s No. 5-8-A Kern County Land in the Wasco field is down 12,970 ft. and the same company's No. 1 Meyer, also in the Wasco field, is going ahead at 11,186 ft. In the Rio Bravo field No. 1 Roe and No. 1 Rudnick of Superior Oil Co. and No. 21-34 Kern County Land of Union Oil Co. are all below 11,200 ft. and should be completed shortly. Out on the north flank of the Greeley field of Kern County, No. 1 Farrand of General Petroleum Corp. is rotating at 11,375 ft. and No. 1 Scofield of Superior Oil Co. and No. 12-7 Kern County Land of Standard follow at 11,338 ft. and 10,379 ft., respectively. Other deep drilling wells include No. 1 B.V.A. of General Petroleum at Buena Vista Lake at 1,312 ft.; Shell's No. 45-9 B.V.A. at Buena Vista Lake at 10,361 ft.; No. 65 Kern County Land of Tide Water Associated Oil Co. in the extreme southeastern end of the Cole's Levee field at 10,910 ft.; No. 43-3-B Kern County Land of Ohio Oil Co. at Paloma at 10,100 ft., and No. 74-3-A Kern County Land of Western Gulf Oil Co. in the same field at 10,610 ft.; No. 1 Slough of Richfield Oil Co., southeast of the Ten Section field, at 10,136 ft.; No. 27-18 of Kenda in the Kettleman North Dome field at 10,200 ft., and No. 72-19-J of Standard Oil Co. in the same field at 10,903 ft. Shell's wildcat in the Tulare Lake district in Kings County is down 10,035 ft., where preparations are under way to land a string of protective casing or devise some other means of eliminating a caving hole. Only one well in the coastal area is below 10,000 ft. and this is No. 4 Dabney of the Lloyd Corp., which is being bailed and swabbed for production after being plugged back to 10,135 ft. All or nearly all of these deep wells should result in commercial production if no mechanical trouble develops. One deep dry hole has been listed for abandonment, No. 1 Bowerbank of Union Oil Co. in the Goose Lake district of Kern County in Section 23-29-24, bottomed at 12,144 ft. This wildcat was tested by stages back to its present plugged depth of 10,870 ft., but the formation was found too tight to produce. A similar tightness of formation was encountered in another deep well drilled in this area by California Lands, Inc., as this well, which also showed an oil sand, found the formation too tight to produce.

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	February 18		February 11			
	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Intercoastal-domestic—						
Crude oil	.....	.....	.....	.....	.....	60,642
Fuel oil	.....	.....	60,530	8,647	152,798	263,250
Diesel and gas oil	.....	.....	.....	.....	.....	163,501
Gasoline	98,015	14,002	.....	.....	125,865	195,754
Kerosene	.....	.....	.....	.....	.....	56,940
Foreign exports—						
Crude oil	183,389	26,198	251,117	35,874	2,114,259	1,882,842
Fuel oil	118,249	16,893	77,099	11,014	1,037,755	1,082,960
Diesel and gas oil	154,514	22,073	115,818	16,545	1,126,261	490,525
Gasoline	17,220	2,460	112,052	16,006	588,800	920,065
Kerosene	.....	.....	14,298	2,043	135,747	206,933
Coastwise-domestic—						
Crude oil	150,606	21,515	255,112	36,445	1,391,476	1,211,119
Fuel oil	195,148	27,878	184,883	26,412	1,767,502	1,197,671
Diesel and gas oil	35,332	5,047	13,833	1,976	351,590	412,608
Gasoline	293,060	41,866	258,136	36,877	1,892,274	1,628,454
Kerosene	5,140	734	.....	.....	73,845	37,292

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Fuel oil	.....	.....	.....	.....	68,740	.....
Diesel and gas oil	.....	.....	.....	.....	210,713	69,550
Lubricants	.....	.....	.....	.....	3,610	4,170
Foreign exports—						
Crude oil	.....	.....	.....	.....	255,294	488,307
Fuel oil	34,205	4,886	.....	.....	175,155	197,240
Diesel and gas oil	144,635	20,662	.....	.....	259,744	64,649
Gasoline	79,117	11,302	.....	.....	384,742	360,110
Kerosene	31,996	4,571	.....	.....	68,553	49,227
Lubricants	1,241	177	.....	.....	2,023	3,386
Coastwise-domestic—						
Fuel oil	135,126	19,304	100,086	14,298	933,711	437,285
Diesel and gas oil	25,073	3,582	26,149	3,736	194,492	36,558
Gasoline	115,191	16,456	140,140	20,020	1,072,339	307,042
Kerosene	3,366	481	11,877	1,697	106,726	52,158

Montebello

The west end of the Montebello field where operators have been exploiting several zones in the Miocene since late in 1938 has become unusually quiet as there are only 14 strings of tools in operation, most of which are located south of Beverly Boulevard and in the west end of the west extension. Since most of the other wells in the extension are still flowing, there is a decided lack of activity throughout the field as a whole. The Department of Natural Resources, headed by Richard Sachse, has been surveying the field in conjunction with representatives of the state Railroad Commission, and has decided to petition the Superior Court through the Department of Oil and Gas to reduce the allowable gas production of the Montebello field from the present 100,000,000 cu. ft. to 80,000,000 cu. ft. At present the field's allowable gas production approximates 100,000,000 cu. ft. daily, of which about 50,000,000 cu. ft. is blown to the air due to inadequate pipe-line facilities. By reducing the field's allowable to the projected amount production of gas would be reduced 20,000,000 cu. ft. per day and the blow cut down to approximately 25,000,000 cu. ft. per day.

The new wells completed in the Montebello extension in the past week showed an aggregate initial production of 1,270 bbl. of crude oil and 5,250,000 cu. ft. of gas. No. 1 Cash of Shoreline Oil Co. flowed 530 bbl. of 38.2-gravity oil and 2,250,000 cu. ft. of gas per day through a 32/64-in. bean from La Merced zone, with bottom of the hole at 7,596 ft. This well was finished with a 7-in. water string cemented at 7,510 ft. and 94 ft. of 4¾-in. liner including 51 ft. of perforated landed on bottom and a string of 2½-in. tubing. No. 19 Wilcox of Columbia Oil Co. flowed 740 bbl. of 38.1-gravity oil and 3,000,000 cu. ft. of gas per day from La Merced zone at 7,556 ft. It was finished with a 7-in. water string cemented at 7,448 ft. and 233 ft. of 5-in. liner, including 86 ft. of 140-mesh perforations landed on bottom. The liner was cemented through perforations at 7,590 ft. and subsequently gun-perforated at 7,462-7,550 ft. In order to be in a good position to drill ahead in the event that operators begin developing the

virgin zone known to exist below La Merced zone. Columbia Oil Co. used 50 ft. of drillable pipe at the top of the liner.

Wilmington

A total of 1,893 bbl. of new production was added to the Wilmington field total this week as the result of the completion of three new wells. Union Pacific Railroad Co.'s No. 127 flowed 953 bbl. of 28.9-gravity oil per day from the Terminal zone, and No. 129 flowed 365 bbl. of 17.1-gravity oil daily from the Ranger zone. No. 127 was finished with an 11¾-in. water string cemented at 2,452 ft. and 1,065 ft. of gravel packed liner with perforations at 2,851-3,195 ft., 3,379-3,475 3,500-62 ft., 3,577-3,635 ft., 3,695-3,762 ft., 3,782-3,832 ft. and 3,862-3,915 ft. The liner was cemented through perforations at 2,842 ft. and 3,372 ft. and the 2½-in. tubing had a packer at 3,226 ft. Tubing pressure of this well was 470 lb. and casing pressure registered 700 lb. No. 129 was finished with a 10¾-in. water string cemented at 2,897 ft. and 711 ft. of 5½-in. liner landed at 3,564 ft. and carrying perforations at 2,869-2,980 ft., 3,040-72 ft., 3,321-3,499 ft., and at 3,519-64 ft. and 2,842 ft. of 2½-in. tubing. Tubing pressure on this Ranger-zone completion was 150 lb. and casing pressure was 700 lb. No. 55-10-S of Wilton Oil Co. was completed flowing 575 bbl. of clean 16.9-gravity oil per day from the Ranger zone through a 40/64-in. bean under a tubing pressure of 190 lb. and a casing pressure of 250 lb. It was finished at 3,696 ft. with an 8⅝-in. water string cemented at 2,988 ft. and through perforations at 995 ft. and 751 ft. of gravel packer liner with perforations at 3,000-3,260 ft., 3,400-3,604 ft. and at 3,634-96 ft. The 3,687 ft. of 2½-in. tubing used in this well had a packer at 2,926 ft. Union Pacific Railroad Co. concluded drilling operations on No. 7-C which has been carried down to the Ford zone at 5,554 ft. and it should be tanking oil within a few days. This hole has been finished with a 7-in. water string cemented at 5,094 ft. and 487 ft. of 4½-in. liner landed at 5,549 ft. and carrying perforations at 5,094-5,255 ft., 5,340-97 ft., and at 5,501-49 ft. The liner was cemented through perforations at 5,333 ft. and 5,494 ft. This well is located immediately adjacent to the town-lot area and was made necessary because of completions in the Ford zone by other operators holding productive leases in the town-lot section of the field. No. 7-C of Union Pacific Railroad Co. is in the west block and will not therefore affect the Ford zone in the Long Beach Harbor section of the field as the two areas are separated by faulting which has resulted in the existence of several separate and distinct blocks. The agreement to refrain from development of the Ford zone in the Long Beach Harbor section of the Wilmington field is still being adhered to and there have been no indications that any operator desires to change the plan which has been in effect nearly 2 years.

Cole's Levee

Standard Oil Co. completed No. 20-3 Kern County Land in the Cole's Levee field of Kern County, in Section 9-31-25, flowing 791 bbl. of 51.7-gravity oil cutting 5 per cent from a depth of 9,396 ft. It was brought in flowing through a 24/64-in. bean behind a tubing pressure of 1,250 lb. and a casing pressure of 1,390 lb. The hole was carried down to 9,934 ft., but was plugged back to the present completion depth. The hole was finished with an 8⅝-in. water string cemented at 8,725 ft. and 1,302 ft. of 5⅜/in. liner which was cemented through perforations at 8,935 ft., 9,242 ft., and 9,773 ft. and carried perforations at 9,247-9,393 ft., 9,478-9,673 ft., and 9,778-9,930 ft. and 9,378 ft. of 2½-in. tubing. The lower part of this hole was wet and is probably the reason for the unusual cut. Richfield Oil Corp. has again reentered No. 76-29-A Kern County Land in Section 29-30-25, which blew out while standing cemented with 1,200 sacks of cement behind the 8⅝-in. water string landed at 8,510 ft. The well blew out 20 hours after being cemented with the gas coming between the 13⅜-in. and 8⅝-in. pipe. The well sanded up and died within a short time with the result that no damage has resulted. Ohio Oil Co. has concluded drilling operations on No. 7-F Kern County Land in Section 3-31-25 at 9,373 ft. and since a 7-in. water string has been cemented at 9,340 ft. the well should be passed for production within another few days.

San Joaquin Basin

Standard Oil Co. recompleted No. 27-19-J in the Kettleman North Dome field after deepening from the Temblor at 8,840 ft. to the Eocene at 10,815 ft. This well, which was carried down to 10,960 ft. and then plugged back to 10,815 ft., showed unmistakable characteristics of the Eocene, as it was returned to production flowing 499 bbl. of 47.9-gravity oil and 16,210,000 cu. ft. of gas per day through a 64/64-in. bean behind a tubing pressure of 850 lb. and a casing pressure of 2,050 lb. Casing in the hole includes 8,000 ft. of 9⅝-in., 8,565 ft. of 7-in., and 10,815 ft. of 5-in., which was gun-perforated at 10,638-62 ft. and 10,117 ft. of 2½-in. tubing. Standard's No. 72-19-J, another projected completion in the Eocene in the Kettleman North Dome field, is held up with a redrill job at 10,690 ft. Bottom of the original hole was 10,960 ft. Kenda's No. 27-18-J in Section 18-21-17, which is headed for completion in the Eocene, is rotating at 10,130 ft. In the Midway-Sunset field of Kern County Standard Oil Co. has completed No. 6-33-D in Section 33-32-24 pumping 271 bbl. of 21.6-gravity oil cutting 3 per cent daily from 3,230 ft. This new well was finished with a 9⅝-in. water string cemented at 3,115 ft. and 154 ft. of 7-in. liner landed at 3,229 ft. and perforated at 3,119-3,229 ft. and 3,095 ft. of 2½-in. tubing.

Coastal District

In the San Miguelito field of Ventura County Continental Oil Co. completed No. 13 Grubb in Section 23-3-24 flowing 2,280 bbl. of 30.7-gravity oil cutting 5 per cent and 1,000,000 cu. ft. of gas per day through open line from a depth of 6,720 ft. It was finished with a 7-in. water string cemented at 5,403 ft. and 1,370 ft. of 5-in. liner landed on bottom and 6,380 ft. of 2½-in. tubing. In the prolific Ventura Avenue field, immediately east of the San Miguelito field, Shell Oil Co., Inc., completed No. 35 Edison early in the week flowing 1,134 bbl. of 30.1-gravity oil cutting 5.9 per cent and 748,000 cu. ft. per day from 9,135 ft. This new well, which is the most northwesterly on the Edison lease, was finished with a 7⅝-in. water string cemented at 7,970 ft. and 1,220 ft. of 5½-in. liner landed at 9,130 ft. and perforated at 7,957-8,085 ft., 8,128-8,683 ft., 8,726-67 ft. and at 8,807-9,130 ft. and 8,968 ft. of

Robert Yarnall Richie

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2½-in. tubing. Production was brought in flowing through two 1-in. beans under a tubing pressure of 100 lb. and a casing pressure of 600 lb. In the Rincon field of Ventura County General Petroleum Corp. recompleted No. 2 Tomson pumping 29 bbl. of clean 28.1-gravity oil per day after cleaning out the hole to bottom, 3,774 ft.

Los Angeles Basin

In the Rosecrans field of Los Angeles County Union Oil Co. completed No. 37 Rosecrans flowing 218 bbl. of 31.8-gravity oil cutting 3 per cent and 872,000 cu. ft. of gas per day from the O'Dea zone with bottom of the hole at 7,700 ft. It produced through a 59/64-in. bean behind a tubing pressure of 150 lb. and a casing pressure of 400 lb. and was finished with a 7-in. water string cemented at 7,397 ft. and 324 ft. of 5½-in. liner landed at 7,697 ft. and carrying 120-mesh perforations at 7,400-82 ft., and 7,547-7,697 ft. and 7,640 ft. of 2½-in. tubing. In the Rancho San Francisco section of the Newhall district Barnsdall Oil Co. has recompleted No. 2 R.S.F. flowing 580 bbl. of clean 32.5-gravity oil and 480,000 cu. ft. of gas per day after redrilling and deepening the hole from the upper zone to the lower horizon at 7,045 ft. This well was the second completion listed by Barnsdall Oil Co. in the field which it discovered several years ago and which to date the company controls exclusively. Turf Oil Co. has derrick up on property of the Hollywood Racing Association in the Inglewood district of Los Angeles County, in Section 34-2-14. This company is controlled by the association. In the extreme western end of the Dominguez field Pongratz Petroleum Co., headed by Gus Pongratz, is nearing a depth of 7,000 ft. and should pick up the seventh and eighth Callender zones within the next 200 ft. if it is to result in commercial production. This well will either determine the western limits of production or extend the productive area and leave the west boundaries open.

Gas Wells

Texas Co. completed a small gas well in the Eureka gas field of Humboldt County, No. 1 Holmes, in Section 22-3-1, flowing 5,200,000 cu. ft. of gas per day from 4,850 ft. The importance of this well from a production standpoint is conjectural in view of its small initial flow, although it is possible that production could be increased by the use of a larger bean. The hole was finished with a 7⅝-in. water string cemented at 3,780 ft. and 1,111 ft. of 4½-in. liner landed at 4,845 ft. and perforated at 3,764-4,845 ft. and 4,799 ft. of 1½-in. tubing. Standard Oil Co. has let contract to the Brown Drilling Co. for the immediate drilling of No. 2 Bryson in the Delano gas field of Kern County, Section 28-24-23, and preparations are under way to spud in shortly. This well is close to No. 2 Bolz, which Standard Oil Co. completed last month flowing 13,700,000 cu. ft. of dry gas per day from 2,486 ft. Trico Oil & Gas Co., which discovered the Delano gas field several years ago, has location staked for No. 1 Daniels in Section 22-24-23 but may delay drilling as natural gas produced in oil fields has first call over gas produced in gas fields and it has been customary to restrict or shut in entirely most dry-gas fields during the summer period when gas demand is lowest.

Indiana Fields

(Continued from Page 84)

bbl. per hour of 32-gravity oil. It was shut in. Snell and others' No. 1 Biggerstaff, SW SW SE Section 6-7s-7w, total depth 1,061 ft., plugged back to 1,056 ft., pumped at the rate of 25 bbl. of oil and 75 bbl. of water per day. Damron Brothers completed a 5-bbl. well in No. 2 Howard, NE NE SE Section 35-3s-7w, in Aux Vases sand at 1,524-36 ft., which had been shot with 40 qt.

In Vanderburg County J. L. Drake's No. 1 Seib, SE NE NW Section 23-5s-10w, was a hole full of water at 1,140-48 ft., total depth, and was abandoned.

New work started in the state included the following operations: In Vigo County Slosi Co.'s No. 1 Strain, C E½ SE NW Section 16-10n-10w, a machine in. In Daviess County Ben Ruble made a location for No. 2 Walker, NE SW SE Section 4-2n-5w.

OHIO

NEWARK, Ohio, Feb. 26.—Medina and Coshocton counties each yield fair oil wells. Seven small gas wells and four dry holes make up the balance of the completions.

In Athens County, Carthage Township, Gibson and others have resumed operations on the W. L. Potter test in Section 18, now drilling at 3,775 ft. In Lodi Township Ohio Fuel Gas Co.'s No. 1 Floyd Harley, Section 17, is dry in the second Berea, total depth 1,543 ft. A. D. Townsend's No. 2 M. H. Loeffler, Section 6, was deepened to the second Berea and found a 50,000-cu. ft. gas production at 1,695 ft.

In Coshocton County, Pike Township, Allen Willey and others' No. 1 Bert Ashcraft, Section 14, made 75 bbl. of oil the first 24 hours after a shot in the Clinton sand at 3,137-96 ft.

In Cuyahoga County, Independence Township, L. F. McGrath's No. 1 Mary Buhl, Lot 15, Tract 2, has an open flow of 150,000 cu. ft. of gas from Newburg sand at 2,633-44 ft. The well had been acidized.

In Lawrence County, Washington Township, Portage Producers, Inc.'s No. 1 Simon L. David, Section 13, gaged 750,000 cu. ft. of gas, open flow, from the Clinton sand, topped at 2,988 ft.

In Lorain County, Ridgeville Township, William Dempsey's No. 1 Olive Hadaway, Lot 40, had a small showing of gas in the Clinton, and was abandoned at 2,431 ft.

In Medina County, Chatham Township, Edson & Son's No. 1 Samuel Brant, Lot 2, Tract 16, was shot in the Berea sand and pumped 100 bbl. of oil in 24 hours after standing 3 days, sand at 415-77 ft.

In Morgan County, Bristol Township, J. V. Bowman and others' No. 1 W. L. Hardesty, Section 23, was dry in the Berea, total depth 1,505 ft.

In Muskingum County, Harrison Township, Sutton Brothers' No. 1 J. M. Bussemer, Section 8, is a small gas well in the Clinton at 4,031-75 ft., gaging 120,000 cu. ft. The Medina sand was dry. In Newton Township Atha Co.'s No. 1 E. S. Roberts, Section 13, has an open flow of 60,000 cu. ft. of gas from Clinton sand at 2,435-70 ft.

In Stark County, Pike Township, Lyons Co.'s No. 1 O. C. Barber, Section 3, is a gas well gaging 500,000 cu. ft. open flow; Clinton at 4,762-88 ft.

In Washington County, Barlow Township, Henning & Hall's No. 1 Lewis Liebrand, Section 3, was dry in the Berea, total depth 2,005 ft. In Liberty Township Heldman & Co.'s No. 1 David Alban heirs, Section 21, has an open flow of 100,000 cu. ft. of gas from the Germantown sand at 1,057-1,115 ft.

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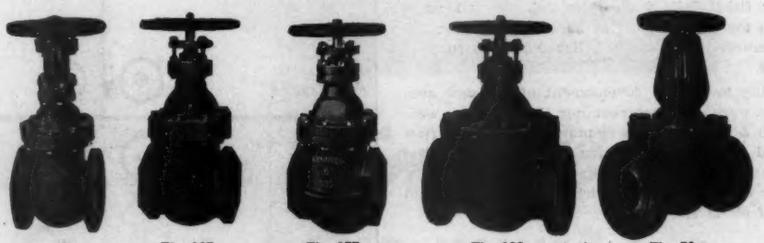

Fig. 170 400-lb. Test | Fig. 187 700-lb. Test | Fig. 177 1000-lb. Test | Fig. 192 1600-lb. Test | Fig. 79 2300-lb. Test

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By
D. H. STORMONT

Western Hockley County Has A Prospective New Oil Field

MIDLAND, Tex., Feb. 26.—Possibilities of a new oil pool in western Hockley County in the far north Permian basin were seen during the past week. The indicated discovery is Helmerich & Payne, Inc.'s No. 1 Whiteface farms, SE cor. Labor 22, League 77, Reeves C.S.L. Survey, 14 miles northwest of the Slaughter field.

Also drawing much attention in the West Texas district was the continued search for 5,200-ft. production from the Holt horizon in Ector County. A structurally-high top on the anhydrite was reported in a central Ector County deep wildcat and porosity and slight saturation were reported in another deep wildcat just southwest of the North Cowden field. New wildcat locations for the week included a test in extreme western Crockett County and one some 12 miles north of the Sharon field in Scurry County.

Hockley County

Helmerich & Payne, Inc.'s No. 1 Whiteface farms, west central Hockley County, was last reported bottomed at 4,714 ft. where the crew was preparing to run 7-in. casing. Cores from 4,692 ft. to 4,714 ft. showed saturation and good porosity. The section resembles the upper pay zone of the Slaughter field, and operators believe that by coring deeper the regular Slaughter field pay section will be found. Offering more than fair chances for production, the wildcat is being correlated some 200 ft. higher than oil wells in the Slaughter field. Despite the fact that the wildcat is higher on the west rim of the basin, some of the 200 ft. of difference in markers is believed due to structural conditions.

Promising immediate development of the new area three tests were staked surrounding the discovery well. Helmerich & Payne, Inc., will move south for its first offset and to the southeast for its next offset. The third location was made by Stanolind Oil & Gas Co. and is an east offset. Helmerich & Payne, Inc., hold a block of about 2,200 acres.

Pecos Ordovician

Offering possibilities for another Ordovician producing area in northern Pecos County is Humble Oil & Refining Co.'s No. 1 Bertha D. Young, wildcat test in Section 33, Block 10, H.&G.N. Survey, about 8 miles northwest of the Apco field. The wildcat topped the detrital zone at 5,185 ft. and, contrary to some opinions, had not topped the Ellenburger lime in drilling to 5,262 ft. At last report the wildcat was below 5,305 ft. with no top of the Ellenburger yet established. It is believed still in the detrital zone.

Ector County

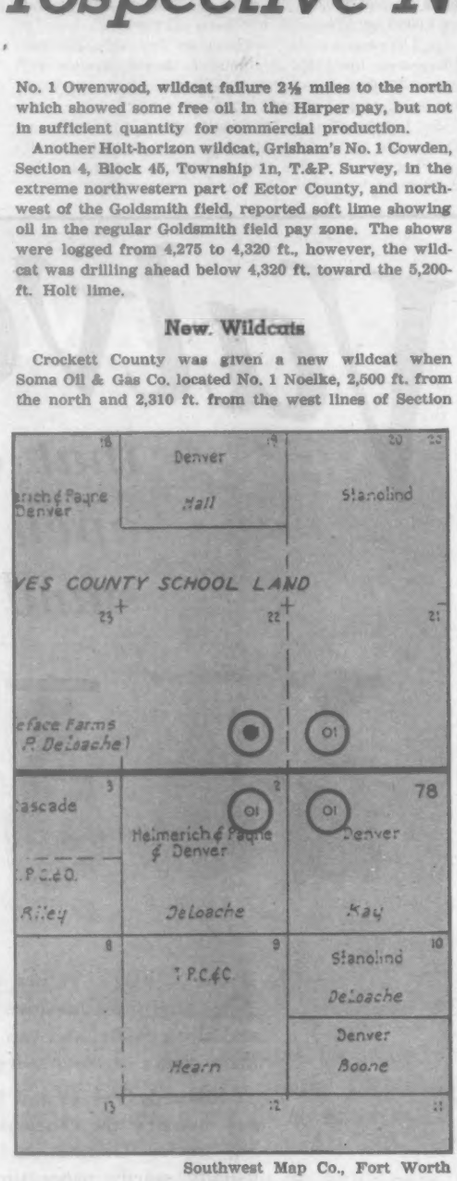
Adding to the rapidly growing interests in deep Holt-horizon production throughout the southern Permian basin area were reports that Landreth Production Corp. and Shell Oil Co., Inc.'s No. 1-A Johnson, Section 43, Block 43, Township 1s, T.&P. Survey, at about the axis of the four major Ector County fields, had drilled lime showing porosity and slight oil stains. A drill-stem test was being prepared as the week closed. The test showed oil-stained lime with porosity from 5,215 to 5,233 ft., but a slight odor of sulfur water was reported to have been detected in the core. Oil-stained lime with porosity had previously been logged from 5,158 to 5,187 ft. The Clear Fork series, of which the Holt lime is a member, was topped at 5,155 ft.

West and slightly south of No. 1-A Johnson R. H. Gill's No. 1 Parker, another deep Holt-horizon wildcat, reported a favorable top of the anhydrite. The test is in Section 12, Block 45, Township 2s, T.&P. Survey, about 2½ miles west and slightly north of the Harper field. The top of the anhydrite was found at 1,390 ft., which places it considerably higher than in wells in the Harper field, but some 49 ft. lower than in Bert Fields' No. 1 Owenwood, wildcat failure 2½ miles to the north which showed some free oil in the Harper pay, but not in sufficient quantity for commercial production.

Another Holt-horizon wildcat, Grisham's No. 1 Cowden, Section 4, Block 45, Township 1n, T.&P. Survey, in the extreme northwestern part of Ector County, and northwest of the Goldsmith field, reported soft lime showing oil in the regular Goldsmith field pay zone. The shows were logged from 4,275 to 4,320 ft., however, the wildcat was drilling ahead below 4,320 ft. toward the 5,200-ft. Holt lime.

New Wildcats

Crockett County was given a new wildcat when Soma Oil & Gas Co. located No. 1 Noelke, 2,500 ft. from the north and 2,310 ft. from the west lines of Section



Southwest Map Co., Fort Worth

Indicating a new oil pool for western Hockley County is Helmerich & Payne, Inc.'s No. 1 Whiteface farms which drilled 22 ft. of saturation. Three offsets have already been staked

30, Block G.G., H.E.&W.T. Survey. The location is 5 miles east of the Yates field and 2 miles east of the Pecos River.

Scurry County received a new wildcat when Coffield & Guthrie, Inc., Corsicana, staked No. 1 J. Wright Mooar, 10 miles northwest of Snyder and about 12 miles north of the Sharon field. It is in the C NW¼ Section 334, Block 97, H.&T.C. Survey.

WEST TEXAS FIELD COMPLETIONS

(24-hour gages)

Ector County

In the Foster field Atlantic Refining Co.'s No. 5-B Johnson, 4,160-4,270 ft., 414 bbl. Stanolind Oil & Gas Co.'s No. 14 Johnson, 4,105-4,220 ft., 239 bbl. Stanolind Oil & Gas Co.'s No. 28 Witcher, 4,040-4,280 ft., 1,361 bbl. Stanolind Oil & Gas Co.'s No. 34 Witcher, 3,990-4,217 ft., 940 bbl. In the Goldsmith field Gulf Oil Corp.'s No. 243 Goldsmith, 4,130-4,207 ft., 1,309 bbl. Gulf Oil Corp.'s No. 248 Goldsmith, 4,162-4,228 ft., 1,276 bbl. Gulf Oil Corp.'s No. 249 Goldsmith, 4,139-94 ft., 276 bbl. Landreth Production Corp.'s No. 9-P Scarbauer, 4,165-81 ft., 408 bbl. Phillips-Pure's No. 73 C. Cowden, 4,149-82 ft., 1,332 bbl.

In the Jordan field Sinclair Prairie Oil Co.'s No. 7-79 University, 3,453-3,640 ft., 1,623 bbl. Shell Oil Co.'s No. 6-E University, 3,370-3,647 ft., 1,059 bbl.

In the North Cowden field Tide Water Associated Oil Co.'s No. 2-B Smith, 4,053-4,168 ft., 1,030 bbl.

Crane County

In the McCamey field Texas Consolidated Oil Co.'s No. 10 Hughes, abandoned location.

Gaines County

In the Wasson field Continental Oil Co.'s No. 4-49 Wasson, 4,900-5,000 ft., 1,209 bbl.

Pecos County

In the Yates field Ohio Oil Co.'s No. G-1-9 Yates, 470-90 ft., 83 bbl. In the Masterson field Oliver & Cowden's No. 4 Masterson, 1,497-1,508 ft., 74 bbl. Adams, Black & Bennett's No. 5 Redmon-Iowa, 1,597-1,627 ft., 212 bbl. A wildcat, Phillips Petroleum Co.'s No. 1 Sarah Byrne, dry and abandoned at a total depth of 1,704 ft.

Scurry County

In the Sharon field Mudge Oil Co.'s No. 2 Dozier, 2,278-2,495 ft., 63½ bbl. J. B. Stoddard's No. 6 McClure, 2,250-2,450 ft., 117 bbl.

Tom Green County

Two wildcats, L. D. Gibson's No. 1 Pugh, abandoned at 397 ft. Johnson's No. 2 Rape, abandoned at 270 ft.

Upton County

In the McCamey field Texas Pacific Coal & Oil Co.'s No. 2-C Sherk, 2,470-2,698 ft., 48 bbl. (old well drilled deeper).

Ward County

In the Payton field Luse & Ice's No. 12 Blair, 2,054-84 ft., 91 bbl. In the Sealy field McQueen & Clevenger's No. 5 Sealy, 3,046-56 ft., 2,233 bbl.

Winkler County

In the Keystone field J. R. Sharp's No. 1 B. F. Jenkins, 3,348-3,400 ft., 18 bbl. J. R. Sharp's No. 5 Walton-Cities Service, 3,353-89 ft., 102 bbl.

Yoakum County

In the Wasson field Continental Oil Co.'s No. 4-A Dowell, 5,000-90 ft., 806 bbl. Mabee Oil & Gas Co.'s No. 18 Willard, 5,000-5,215 ft., 1,000 bbl. Mabee Oil & Gas Co.'s No. 1-C Willard, 5,000-5,185 ft., 1,017 bbl. J. W. Murchison's No. 1-A Anderson, 4,938-5,235 ft., 900 bbl. Osage Drilling Co.'s No. 1-A N. W. Willard, 4,930-5,170 ft., 1,194 bbl.

WEST CENTRAL TEXAS

FORT WORTH, Tex., Feb. 26.—A quiet week was passed in the West Central Texas district, little more than routine drilling having been reported. Centering the attention in Stephens County was the limiting of the Stribling field on the west side by a semiwildcat which had been in the testing stages for several weeks.

About ½ mile from the center of the Stribling field Grace & Woods' No. 1 Joe Beatty, W. Bales Survey, was completed for an official gage of 12 bbl. daily, pumping.

Pay was drilled from 3,610 to 3,658 ft. Several weeks ago the well indicated it would be one of the largest producers in the field. The gage was made after the pay section had been acidized three times with a total of 10,000 gal.

Another field receiving definite limitations was the Ivy area in extreme northwestern Shackelford County. For several weeks two northwest outposts to the field have been closely watched as prospective extensioners. Both were completed in the past week, but either one would serve to limit drilling in that direction. Just east of the county line, in the S½ SE Section 16, Block 3, H.&T.C. Survey, West & Honea's No. 2 Martin was officially gaged at 5 bbl. of fluid, 20 per cent water. Only 2 feet of pay was drilled, 3,178-80 ft. About three locations west of this small producer and across the line in Jones County, Eastus, trustee, and Leidecker's No. 1 Martin, SE cor. SE¼ Section 16, Block 3, H.&T.C. Survey, was gaged at 5 bbl. of fluid, 10 per cent water. The gage was made following a 30-qt. shot in the pay section from 1,925 to 1,935 ft. As a result of these two completions drilling to both the Palo Pinto lime and the shallow King sand in a northwest direction is scheduled to cease.

WEST CENTRAL TEXAS COMPLETIONS

(24-hour gage)

Brown County

In the Byrd Store field Wilson Oil Co.'s No. 2 M. Bowden, W. E. Gillihend Survey No. 138, abandoned location.

Callahan County

In the Scranton field Warren's No. 1-C Clinton, M. Cherry Survey No. 4, dry and abandoned at 1,708 ft. J. D. Sandefer, Jr.'s No. 1 Sprawls, M. Cherry Survey No. 4, dry and abandoned at 1,701 ft. M. M. Little's No. 1 B. Clinton, M. Cherry Survey No. 4, 1,724-25 ft., 122 bbl.

In the Cross Plains shallow field Hinkle's No. 3 Henderson, Section 58, Comal C.S.L. Survey No. 181, 384-98 ft., 5 bbl.

In the Jackson field Bond-Williams-Jones' No. 1 Davis, Section 13, E.T. Survey, dry and abandoned at 1,300 ft.

A wildcat, R. F. St. John's No. 1 Henshaw, Section 29, Block 8, S.P. Survey, dry and abandoned at 1,744 ft. (old well drilled deeper).

Coleman County

In the Burkett field Tinsley Oil Co.'s No. 1 Webb, Henry Odel Survey No. 178, dry and abandoned at 500 ft.

In the Echo field W. J. Murray's No. 1 Dibrell, J. R. Pace Survey No. 85, 3,105-23 ft., 42 bbl.

Comanche County

In the Amity field St. John & Choate's No. 1 Roy, Section 5, Lampasas C.S.L. Survey No. 34, dry and abandoned at 600 ft.

Eastland County

A semiwildcat, Groce's No. 1 Rush, Section 130, Block 3, H.&T.C. Survey, dry and abandoned at 1,732 ft.

Erath County

A wildcat, Morrissey's No. 1 Sikes, J. Hargrave Survey, Abstract 358, dry and abandoned at 1,875 ft.

Jones County

In the Ivy field Eastus, trustee's No. 1 Martin, Section 16, Block 3, H.&T.C. Survey, 1,925-35 ft., 5 bbl. fluid with 10 per cent water.

In the Avoca field Dee Humphrey's No. 1 Bounds, Section 21, Block 4, H.&T.C. Survey, 3,265-67 ft., 30 bbl. oil and 30 bbl. water.

In the Hamby field Le Clair Oil & Gas Co.'s No. 2 Bartlett, Section 59, Block 14, T.&P. Survey, dry and abandoned at 1,668 ft.

In the Lewis field Bridwell Oil Co.'s No. 2 Carter, Section 37, Block 15, T.&P. Survey, 1,909-22 ft., 272 bbl. Bridwell Oil Co.'s No. 3 Carter, Section 37, Block 15, T.&P. Survey, dry and abandoned at 1,960 ft. King Oil Co.'s No. 10 Carter, Section 37, Block 15, T.&P. Survey, 1,905-32 ft., 325 bbl. Petroleum Production Co.'s No. 2 McKeown, Section 36, Block 15, T.&P. Survey, 1,881-88 ft., 271 bbl. Wichita Production Co.'s No. 5 Daugherty, 1,882-88 ft., 237 bbl. In the Noodle Creek field Butler & Horne's No. 1 Huddleston, Section 48, Block 18, T.&P. Survey, dry and abandoned at 3,059 ft. C. Lanchaster-Atkinson's No. 4 Tiner, Section 14, Block 19, T.&P. Survey, dry and abandoned at 2,552 ft. Humble Oil & Refining Co.'s No. 6 Irwin, Section 48, Block 18, T.&P. Survey, 2,382-87 ft., 234 bbl.

Shackelford County

A wildcat, De Grazier's No. 1 Ghio, Section 1563, T.E.&L. Survey, dry and abandoned at 3,894 ft.

In the Ghio-Harbough field, Georgian Oil Corp.'s No. 12 Black, Section 508, T.E.&L. Survey, 593-603 ft., 8 bbl. Georgian Oil Corp.'s No. 14 Black, Section 508, T.E.&L. Survey, 587-97 ft., 10 bbl. Loggie & Arendt's No. 10 Ghio, Section 397, T.E.&L. Survey, 588-600 ft., 5 bbl.

In the Albany field L. F. Hooker's No. 3-B Walker, Section 383, T.E.&L. Survey, dry and abandoned at 468 ft. Craighead's No. 1 Fincher, Section 527, T.E.&L. Survey, dry and abandoned at 807 ft. Yates & York's No. 1 Huskey, Section 527, T.E.&L. Survey, dry and abandoned at 510 ft.

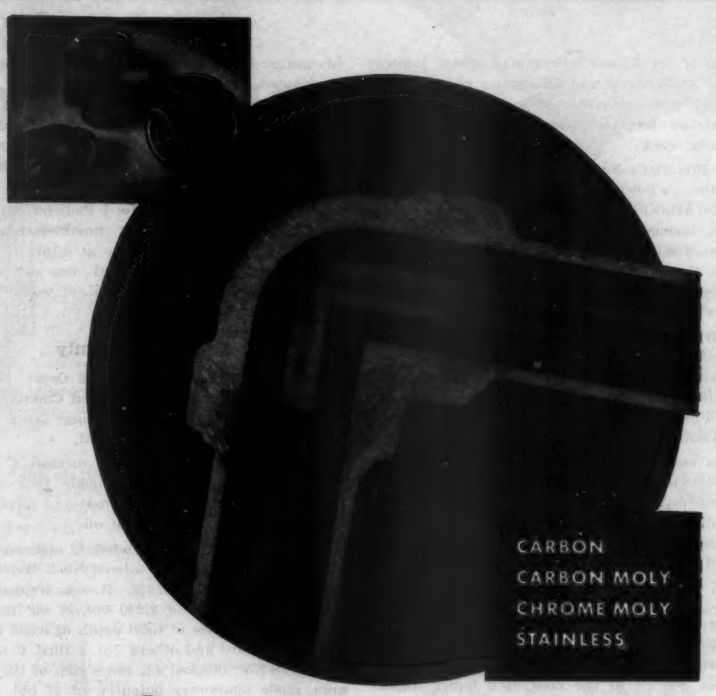
In the Cook field Roeser-Pendleton, Inc.'s No. 2-B-113 Cook, Section 113, E.T. Survey, gaged 2,500,000 cu. ft. of gas and is to be used for repressuring. Roeser-Pendleton, Inc.'s No. 3-B-113 Cook, Section 113, E.T. Survey, 1,462-75 ft., 322 bbl.

A wildcat, Long & Wolfe's No. 1 Snyder, Section 38, L.A.L. Survey, dry and abandoned at 4,291 ft.

In the Davis field Martin & Sons' No. 8 Davis, Section 220, E.T. Survey, 1,696-1,707 ft., 50 bbl.

In the Ivy field West & Honea's No. 2 Martin, Section 16, Block 3, H.&T.C. Survey, 3,178-80 ft., 5 bbl. fluid with

(Continued on Page 105)



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Kansas Developments

By
DAL DALRYMPLE

Ellsworth Test Opens Pool South of Stoltenberg Field

Discovery of an Arbuckle-lime pool about midway between the Stoltenberg and Stratmann pools in Ellsworth County and extensions of pools in Barton and Russell counties featured operations in Kansas oil fields the past week.

Lauck & Moncrief's No. 1 Ehler, CWL SW NW Section 35-16-10w, wildcat in Ellsworth County, found saturation in Arbuckle lime at 3,295-97 ft., total depth, and set 7-in. casing at 3,295 ft. preparatory to testing. Topeka lime was found at 2,580 ft., Lansing lime at 2,943 ft. It checks high structurally. Location is 1¾ miles southeast of the Stoltenberg pool and 2 miles northwest of the Stratmann pool.

Cities Service Oil Co. was testing its No. 1 Sutton, SE cor. Section 7-13-14w, after perforating casing and acidizing Lansing lime. It found dry Arbuckle lime at 3,090-3,118 ft., total depth, and 7-in. pipe was set at 3,090 ft. If a producer, it will extend the Atherton pool in Russell County ½ mile northeastward.

The Prusa pool in Barton County was extended ½ mile southeastward at George W. Hinkle and others' No. 1 Burmeister, Section 27-16-11w, and ¾ mile westward at Gulf Oil Corp.'s No. 1 Redetzke, SE SE NE Section 19-16-11w. The former was a completion. The latter had Arbuckle lime at 3,333-38 ft., total depth, and oil rose 1,000 ft. in the hole in 2 hours after plug was drilled. A third extension was recorded in the Krier sector of the Prusa field at Texas Co.'s No. 1 Janssen, C E½ NE SE Section 31-16-11w, which topped Arbuckle lime at 3,331 ft., total depth 3,341 ft., and after oil rose 800 ft. in the hole in 6 hours it was swabbed at the rate of 7½ bbl. an hour. Operators were preparing to acidize and test.

Wildcat Completions

National Refining Co.'s No. 1 Lankford, SE SE NE Section 23-27-5, wildcat east of the Haverhill area, Butler County, based Mississippi lime at 3,087 ft., Kinderhook shale 3,128 ft., Simpson zone 3,163 ft., had a hole full of sulfur water at 3,167-70 ft., total depth, and was abandoned.

Allison & Talbott and others' No. 1 Zink, SE SE NE Section 32-29-5, Butler County wildcat, 3 miles north of the Rock pool in Cowley County, found Arbuckle lime at 3,216-24 ft., total depth 1,600 ft., water intruded and it was abandoned.

Cities Service Oil Co.'s No. 1 Padlena, SE SE SE Section 26-14-10w, wildcat in northwestern Ellsworth County, topped Arbuckle lime at 3,101 ft., total depth 3,113 ft., plugged back to 2,838 ft., was shot and acidized, pumped 3 bbl. of oil and 87 bbl. of water in 24 hours, and was abandoned.

Barton County

Sinclair Prairie Oil Co.'s No. 2 Oeser, NW SW Section 17-16-11w, Prusa area, Barton County, made daily potential of 2,027 bbl. of oil at total depth of 3,325 ft., in Arbuckle lime. It was acidized.

Sharon Drilling Co.'s No. 1 Leurman, C S½ NE SE Section 18-16-13w, found Arbuckle lime at 3,358 ft., total depth 3,362 ft., was acidized and made top allowable potential of 3,000 bbl. of oil.

The Prusa pool was extended ½ mile southeastward at George W. Hinkle and others' No. 1 Burmeister, NW NW SW Section 27-16-11w. It was treated with acid and made potential of 2,240 bbl. of oil by calculation from Arbuckle lime at total depth of 3,365 ft.

J. A. Aylward and others' No. 1 Bird, C SE NW Section 33-18-15w, outpost 1¾ miles east of the Otis-Albert area, made temporary potential of 61 bbl. of oil, with 3,000,000 cu. ft. of gas, at total depth of 3,510 ft. in basal sand.

Gulf Oil Corp.'s No. 1 Howard, CNL NW SE Section 8-20-11w, Silica-Ellinwood district, was acidized and made daily potential of 2,532 bbl. of oil from Arbuckle lime at 3,320 ft., total depth.

Lario Oil & Gas Co.'s No. 3-B Zajorsky, NW SW NE Section 23-20-11w, was drilling below 132 ft. Texas Co.'s No. 1 Petz, C N½ NE SE Section 7-20-11w, moving in material.

Estimated Daily Production

Estimated daily production for Kansas for the week ended February 24, and for the preceding week, was as follows:

	Barrels	
	Feb. 25	Feb. 17
Oxford City	800	750
Burrton	9,250	9,100
Ritz-Canton	4,300	4,350
Graber	3,400	2,800
Hollow-Nikkel	1,600	1,500
Lerado	700	850
Voshell	1,650	1,700
Wellington	1,800	1,800
Ellsworth County:		
Lorraine	1,900	1,150
Other pools	2,125	1,900
Rice-Barton counties:		
Bloomer	3,650	4,550
Chase	4,900	4,200
Geneseo	4,450	5,250
Raymond	500	700
Silica	10,800	12,850
South Silica	2,400	2,600
Keesling	850	650
Wherry	3,350	3,850
Miscellaneous Rice	4,450	4,575
Miscellaneous Barton	6,630	6,285
Trapp district	14,100	13,300
Balance Russell County	20,100	21,250
Sedgwick County	3,250	3,250
Ellis County:		
Bemis	7,100	6,450
Miscellaneous	5,370	5,675
Kingman County	860	905
Stafford County	4,570	6,510
Greenwood County	8,250	8,250
El Dorado	7,600	7,650
Other fields	32,495	32,050
Total Kansas	173,200	176,700

Ellis County

Dickey Oil Co.'s No. 3 Stein, CNL SW SE Section 7-11-17w, Burnett pool, Ellis County, was completed for maximum allowable potential of 3,000 bbl. of oil from Arbuckle lime at total depth of 3,386 ft.

Twin Drilling Co.'s No. 3 Karlin, C SE SE Section 6-12-17w, Shutts area, was acidized and made swabbing potential of 96 bbl. of oil at 3,665 ft., total depth, in Arbuckle lime.

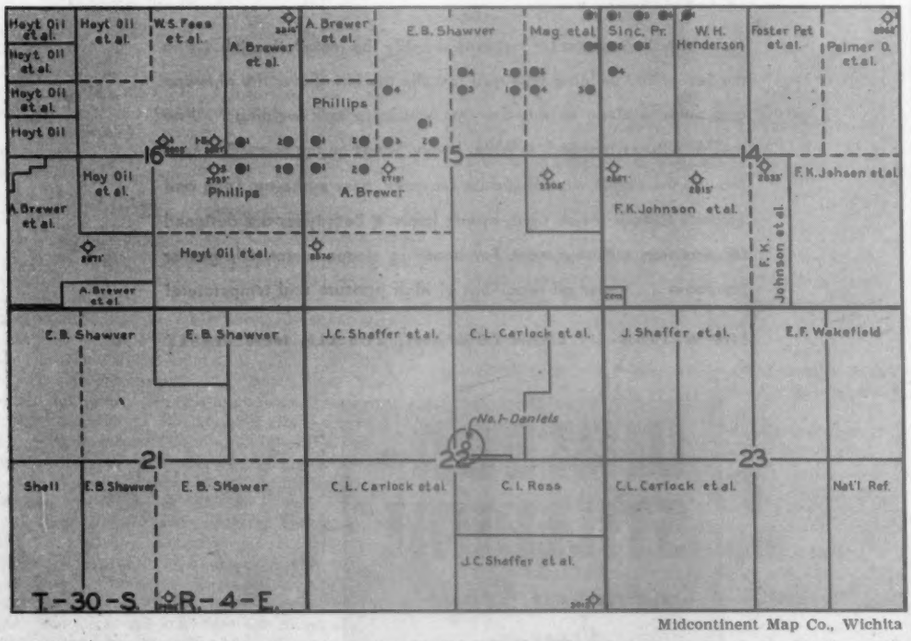
New work in Ellis County: Dickey Oil Co.'s No. 7-A Carmichael, C S½ SE NW Section 18-11-17w, building rotary rig; same company's No. 8 Carmichael, C N½ NE NW Section 18-11-17w, building rotary rig; same company's No. 2 Husted, C N½ NE SW Section 18-11-17w, cellar; Harbar Drilling Co.'s No. 1 Shutts, C N½ NW NE Section 32-11-17w, location; J. J. Hall's No. 6-B Oswald, C E½ NW SE Section 11-12-16w, moving in material; Lario Oil & Gas Co.'s No. 3-B Walter, C S½ SW SW Section 2-12-18w, moving in material.

Russell County

Phillips Petroleum Co.'s No. 1 Boxberger, NW SW NW Section 24-14-15w, Neidenthal area, Russell County, was completed for potential of 169 bbl. of oil daily from Lansing lime at total depth of 3,027 ft.

Continental Oil Co.'s No. 3 Hall, CWL SW SE Section 29-14-13w, Hall pool, was bottomed in Lansing lime at 2,880 ft. and made daily potential of 772 bbl. of oil.

First reports of new operations in Russell County: Stanolind Oil & Gas Co.'s No. 7 Roesner, C S½ NE SW Section 9-15-13w, location; same company's No. 3 Witt, C W½ NE SW Section 10-14-15w, location; Coralena Oil Co.'s No. 1 Hinderliter, C W½ SW SW Section 28-15-13w, moving in material; same company's No. 7 Dumler, SW NW NW Section 36-15-14w, set casing and waiting on cement at 217 ft.; same company's No. 1 Graham, C S½ SW SE Section 21-14-13w, building rotary rig; Gulf Oil Corp.'s No. 1 Aubyn, NE cor. Section 1-15-15w, cellar; W. C. McBride, Inc.'s No. 6 Jellison, SE NW SW Section 19-13-14w, surface casing; Texas Co.'s No. 2 Deines, C N½ SW NE Section 19-13-14w, cellar; same company's



Midcontinent Map Co., Wichita

C. L. Carlock and others' No. 1 Daniels, Section 22-30-4e, is a wildcat location south of the Rock pool in northern Cowley County

No. 3 Rogg, SW SW NW Section 35-14-13w, location; Skelly Oil Co.'s No. 1 Hickey, C N½ NW NW Section 30-14-13w, location; same company's No. 1 Hilder, C E½ NE SW Section 27-14-14w, location; Sterns and others' No. 4-C Olson, C W½ SE NW Section 27-14-14w, moving in material.

Rice County

Gerbrand-Pulse & Schneider's No. 1 Gum, NE SE Section 34-19-10w, Silica district, Rice County, completed in January for physical potential of 845 bbl. of oil, made top allowable potential of 3,000 bbl. daily by calculation on retest. It found Lansing lime at 2,994 ft., Arbuckle lime 3,284 ft., and was bottomed at 3,290 ft.

Saco Oil Co.'s No. 1 Hohl, C SE NW Section 12-18-10w, topped Arbuckle lime at 3,286 ft. and was dry and abandoned at 3,298 ft., total depth.

Gulf Oil Corp.'s No. 6 Stout, C N½ NW NE Section 6-18-10w, was rigging rotary. Westgate-Greenland Oil Co.'s No. 1-A Johnson, C S½ SE SE Section 24-20-6w, was a location. Gulf Oil Corp.'s No. 3 Drake, C S½ SE SW Section 31-20-7w, was building rotary rig.

Stafford County

Stanolind Oil & Gas Co.'s No. 1 Heggy, CEL NE NE Section 10-24-11w, Zenith field, Stafford County, was bottomed in Misener sand at 3,798 ft., and made top allowable potential of 3,000 bbl. of oil daily.

Stanolind Oil & Gas Co.'s No. 7 Harbeson, C S½ N½ NW Section 11-24-11w, was building rotary rig. Same company's No. 9 Martin, C E½ SW NW Section 14-24-11w, was a rotary rig.

McPherson County

Tulsa Oil Corp. and Bradley Brothers' No. 1 Mattson, C S½ SE SW Section 19-20-5w, extended the Bornholdt pool in McPherson County ⅝ mile northwestward. It made potential of 623 bbl. of oil on bottom-hole pressure test from chat at 3,336 ft., total depth, and tubing was being run for physical test.

Continental Oil Co. and others' No. 9 Graber, SW SW NW Section 32-21-1w, was building rotary rig. Republic Natural Gas Co.'s No. 1 Mattson, C S½ SW SW Section 19-20-5w, was a location. Same company's No. 1 Knackstedt, C S½ SW NW Section 30-20-5w, was a location.

Pratt County

Skelly Oil Co. completed a 29,400,000 cu. ft. gas well in the Pratt County sector of the Cunningham pool at No. 1-B Krehbiel, C SW¼ Section 1-28-11w. Production was determined on back-pressure test following acid treatment. It was bottomed at 4,223 ft. in Viola lime.

Johnson County

Sagamore Oil & Gas Co.'s No. 1 Rankin, SW SE SW Section 20-14-22, Gardner area, Johnson County, was dry and abandoned at total depth of 895 ft.

New Operations

In Butler County: Adair & Morton's No. 9 Brandt, NW NW NE Section 15-28-7, ponds; Sinclair Prairie Oil Co.'s No. 9 Watts, NW SE SE Section 13-26-4, location; Associated Oil Co.'s No. 6-A Cook, SW NE NE Section 4-26-5, drilling below 70 ft.

Greenwood County: A. M. Landon's No. 2-B Johnson, NE NW NW Section 22-24-12, moving in machine.

Cowley County: Devonian Oil Co.'s No. 1 Knapp, SE SE SW Section 11-34-5, location.

Ellsworth County: Continental Oil Co. and others' No. 4 Steinberg, SW SW NW Section 27-17-8w, rigging up rotary; Phillips Petroleum Co.'s No. 2 Harejse, C E½ NE NE Section 17-16-10w, location.

Forest City Basin

ST. JOSEPH, Mo., Feb. 26.—The first oil test in Randolph County, Missouri, has been started at C. R. Gallemore's No. 1 Buckler, SW NW Section 22-52-14w, about 2½ miles southeast of Higbee. The crew was drilling below 320 ft. The operator has headquarters at Moberly, Mo.

In Holt County, Northwest Missouri, work was resumed at Brin & Nathan's No. 1 Decker, C NW NW Section 1-61-38w, which has been shut down since last fall. Bit lost in the hole last September when drill stem broke was recovered after a shot, and the crew was directed to resume drilling.

Elsewhere in Missouri, George Vincent and others' No. 1 Dillingham, C NE SW Section 16-53-34w, Platte County, was preparing to resume after being shut down

(Continued on Page 99)

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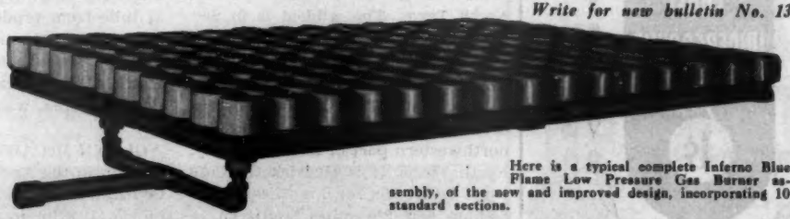

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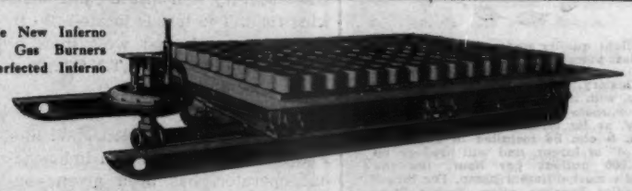
Pictured here is one of the New Inferno Blue Flame Low Pressure Gas Burners equipped with the newly perfected Inferno Automatic Damper Control. This installation gives proper control of secondary air by automatic shutter-door action along sides of fire box.



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Among the Drilling

R. G. JOHNSON, of Rogers, Ark.; Forrest Clark, of Hindsville, Ark., and F. E. McKnight, of Alma, Ill., have formed the Arkansas Drilling Co., of Rogers, Ark.

SULTANA DRILLING CO., of Shreveport, La., will drill a Miller County, Arkansas, well in the Rodessa field for Freeman W. Burford. Operations contracted on the No. 1 G. T. Atkins are expected to be under way shortly.

LOFFLAND BROTHERS, drilling contractors, have opened offices in the Petroleum Building, Midland, Tex. Lee Brown is in charge of the West Texas and New Mexico division.

YOUNGER BROTHERS, INC., Houston, Tex., oil-field trucking contractors, recently opened offices in the Petroleum Building, Midland, Tex. Dalas Dale is in charge of West Texas and New Mexico. They also opened offices at Jennings, La., for southern Louisiana. L. T. (Alph) Richey is in charge of that district. Edward Younger is interested in production in South Texas.

GRACE & WOODS DRILLING CO., Wichita Falls, Tex., has spudded the S. H. Fagadau No. 1 Potts, a wildcat test located ¾ mile west of the K.M.A. field in Wichita County, North Texas. The wildcat is in Section 4, Block 7, H.&T.C. Survey.

E. C. NORWOOD, contractor of Wichita Falls, Tex., has been let the drilling of a new wildcat in the northwestern part of Archer County, North Texas. It is Hedrick Oil Co.'s No. 1 L. W. McCrory, a 4,700-ft. Caddo-lime test 2⅛ miles southeast of the discovery well in the South Mankins field. The test is located 330 ft. from the south and west lines of Section 2, Block 94, A.T.N.C.L. Survey.

W. B. OMOHUNDRO, Wichita Falls, Tex., contractor and independent operator, has been given contract for a new wildcat in Montague County, North Texas. It will be drilled for Ramsey Petroleum Corp. of Oklahoma City and will be its No. 1 W. H. Magee, located 500 ft. south and 330 ft. west of the southwest corner of the J. Hodges Survey, but in the A. C. Davis Survey, Abstract 302. The company holds about 1,000 acres in the area and has just completed a seismograph survey.

HELMERICH & PAYNE, INC., Tulsa, has indicated a new field in Hockley County, West Texas, at its No. 1 Whiteface farms. The wildcat is located in Labor 22, League 77, Reeves County School Lands, 14 miles northwest of the Slaughter field. The firm was last reported preparing to set casing after having drilled 72 ft. of saturation, the last 20 ft. being heavily saturated, to a total depth of 4,732 ft.

MITCHAM BROTHERS, Brownwood, Tex., have been given contract to deepen Davis, McDonald & Campbell's No. 4 Hill, semiwildcat test near Grosvenor in Brown County, West Central Texas. The test failed to pay off from the Fry sand at 1,330 ft. and will be carried to the Leslie sand. Location is in the Myrum Mudgett Survey and near three small producers completed several weeks ago.

ALLEN & MORRIS have started a new test in the La Rosa field, Refugio County, Texas, for Coronado Oil Corp., and are drilling on two other operations in Duval and Calhoun counties for Standard Oil Co. of Texas and Coronado Oil Corp.

A. T. McDANNALD extended production in the Magnet field, Wharton County, Texas, with the completion of McDannald Oil Co.'s No. 1 Shotwell. The well is located about ¼ mile from production on the east edge of production. In Brazoria County, McDannald Oil Co.'s No. 1 Hatfield, a wildcat located in the Pearland area, was spudded.

GLENN McCARTHY extended production in the Anchor field, Brazoria County, Texas, with the completion of No. 1 Salmon and Momma. The well was drilled to a total depth of 10,756 ft., and production was obtained by perforating casing at 9,820-24 ft. Four other operations are reported in the field, while in the Chocolate Bayou field, Louisiana, two outpost wells are drilling below 10,000 ft.

PATRICK & TYRELL moved a rotary to the North Cheek field, Texas, for Strake Petroleum Co.'s No. 1 J. H. Phelan, a projected 9,000-ft. test located in the S. Stivers Survey.

GEORGE ECHOLS started another operation in the South China field, Jefferson County, Texas, for Titanic Oil Co., and is drilling below 3,600 ft. on the same company's No. 1 T. J. Poole, located on the flank of the old Allen dome. The Titanic Oil Co. is controlled by the contractor.

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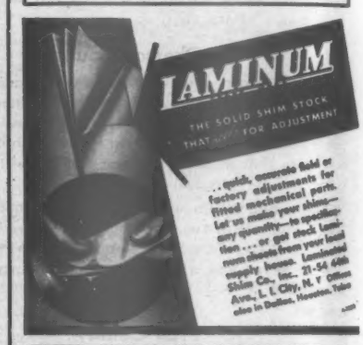
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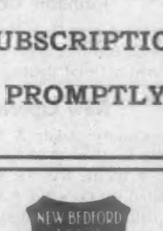

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Another operation is reported in Liberty County for Titanic Oil Co. and Hebert & Smith's No. 1 Boyt.

J. W. FRAZIER cemented a protection string of 9⅝-in. casing below 6,000 ft. in Bunte Brothers' No. 1 Earnest, a projected Wilcox test in Bee County, Texas. Another rotary is being moved to the North Cheek field, Jefferson County, for Strake Petroleum Co.'s No. 1 Pipking.

CHRISTIAN-CARPENTER Drilling Co. is preparing to spud Richard Rodgers and others' No. 1 B. G. Daugherty, a wildcat located 2 miles north of the Fairbanks field, Harris County, Texas.

CROSBY DRILLING CO. abandoned Providence Oil Co.'s No. 1 Strawbridge, a wildcat in Matagorda County, Texas, at a depth of 9,015 ft. In Wharton County, Strake Petroleum Co.'s No. 1 Poole, a wildcat located in the Lissie area, is drilling below 7,550 ft.

MARTIN THOMPSON is waiting for orders after a production test of George Anderson's No. 1 Lawrence, a wildcat 2½ miles northeast of the Cedar Point field, Chambers County, Texas, tested salt water. The well was drilled to a total depth of 7,215 ft., and the test was made through perforated casing at 7,126-35 ft.

NICKLOS DRILLING CO. is preparing to spud the company's No. 1 Ruppert, a projected 9,000-ft. wildcat located about 6 miles east of the Tepetate field, Acadia Parish, coastal Louisiana. Two operations are reported in the Villa Platte field, Evangeline Parish, for Continental Oil Co., while in St. Mary Parish and located in the Bateman Lake field, production tests were being made on two deep tests for the Texas Co. Another operation is reported in Montgomery County at Continental Oil Co.'s No. 1 Bender.

GRAY & WOLFE are starting another operation in the Chiltipin Creek field, Duval County, Texas. The well is being drilled jointly with Wesland Oil Co., and is located on the Tom Graham lease in Survey 572.

RUTHERFORD DRILLING CO. is moving a rotary to Duval County, Texas, for the company's joint wildcat test with R. S. Waldron. The well is located on the Clara Driscoll lease, about 11 miles west of Benavides in U. Lott Survey 243. Contract depth is 4,500 ft.

LOFFLAND BROTHERS abandoned Cities Service Oil Co.'s No. 1 Cook, a wildcat in Harris County, Texas, at a total depth of 7,589 ft. In the Merryville area, Beauregard Parish, Louisiana, California Oil Co.'s No. 3 Long-Bell Lumber Co. is being rigged up.

SMITH BROTHERS Drilling Co.'s No. 1 Hanifan, in SE NE NW Section 24-11-4e, in the North Shawnee pool, in Pottawatomie County, Oklahoma, has been drilling below 4,214 ft. in shale.

Snapped shortly after the record flow of Sinclair Prairie Oil Co.'s No. 1 Howard, new field opener in Montague County, North Texas, are Jim Adkins and Dick Barnett. They were driller and contractor, respectively, at the estimated 3,500-bbl. discovery

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Oklahoma Operations

By
DAL DALRYMPLE

Fifth Producer in Byars Area; King-Hunton Pool Extended

The fifth producer in the Byars pool of southeastern McClain County was near completion and several other tests were under way or starting in that new oil area. Patsy Oil Co.'s No. 2 Richardson, NE SW SE Section 9-5-3e, was washed in at the rate of 50 to 60 bbl. of oil an hour at the weekend at total depth of 3,674 ft. in Viola lime. Other tests in the area include the Patsy company's No. 2 Caldwell, SW NE NE Section 16-5-3, derrick; Simpson-Roodhouse Drilling Co.'s No. 2 James, NW SE SW Section 9-5-3, drilling below 2,860 ft.; same company's No. 3 James, SE SE SE Section 9, derrick, and Benedum-Trees Oil Co.'s No. 1 James, SW NE SE Section 9, location with work due to start by March 1.

Eason Oil Co. and Grisso Royalty Co.'s No. 1 Crane, NW cor. Section 31-10-5, Pottawatomie County, extended the King pool about ½ mile northwestward. It topped Hunton lime at 4,240 ft., total depth 4,430 ft., plugged back and perforated 4,232-45 ft., was acidized and swabbed 105 bbl. of oil net in 3 hours.

Magnolia Petroleum Co. was preparing to drill a wildcat at No. 1 Kring, C SE SW Section 12-21-3w, in Garfield County, north of the North Lucien area, southeast of the Garber field and southeast of the Polo pool. A new wildcat was due to start soon in Beckham County at Vern Griggs' No. 1 Kinchen, SE cor. Section 4-9-25w.

Largest producer of the week was Ohio Oil Co.'s No. 6 Lackey, Section 11-5-9w, a 2,877-bbl. oil well in the Cement field, Caddo County.

Maryatt & Hackathorn's No. 2 Edgar, SW NW Section 36-24-16, Rogers County test, was shut down at 734 ft. in Mississippi lime.

Oklahoma Completions

Devonian Oil Co.'s No. 1 Homestake, NE SW NE Section 22-8-7, outpost in the Jackson area, Seminole County, had Gilcrease sand at 3,166 ft., Cromwell sand 3,228 ft., total depth 3,353 ft., plugged back to 3,205 ft., and pumped 31 bbl. of 38-gravity oil daily.

Tom Nix' No. 1-A Warren, SE SE SE Section 4-6-8, wildcat twin to a dry hole in Hughes County, had Allen sand at 897 ft. and was dry and abandoned at 930 ft.

Waco Turner's No. 1 Smith, NE SW SE Section 16-3s-1w, wildcat northwest of Ardmore, Carter County, was bottomed at 3,640 ft. in Hoxbar sand and temporarily abandoned.

Forrest Lindsay and others' No. 1 Boake, SW SW SW Section 29-7-16w, outpost in the Komalty area, Kiowa County, found Viola lime at 1,106 ft. and was dry and abandoned at 1,250 ft., total depth.

Pottawatomie County

Hilton Phillips' No. 4-A Bettis, SE SW SW Section 21-7-4, St. Louis district, Pottawatomie County, second Wilcox sand at 4,298 ft., total depth 4,300 ft., 535 bbl. of oil and 200 bbl. of water.

Elko Oil Co.'s No. 2 Smith, NE SW SE Section 26-7-4, old well, deepened from 4,209 ft. to Wilcox sand 4,260 ft., total depth 4,365 ft., plugged back to 4,265 ft., acidized, 90 bbl. of oil and 2,000 bbl. of water. Gulf Oil Corp.'s No. 6 Green, SE NE SE Section 17-7-4, old well plugged back and abandoned at 4,231 ft. J. S. Alcorn's No. 3 Rice, NW SE NE Section 32-7-4, old well, plugged back, abandoned at 4,305 ft. Denver Producing & Refining Co.'s No. 2 Villines, C E½ SW SW Section 36-7-4, old well, deepened to 4,267 ft., 115 bbl. of oil. Gulf Oil Corp.'s No. 3 Johnson, SE SE NW Section 29-7-5, old well, deepened to 4,184½ ft., 258 bbl. of oil.

Okfuskee County

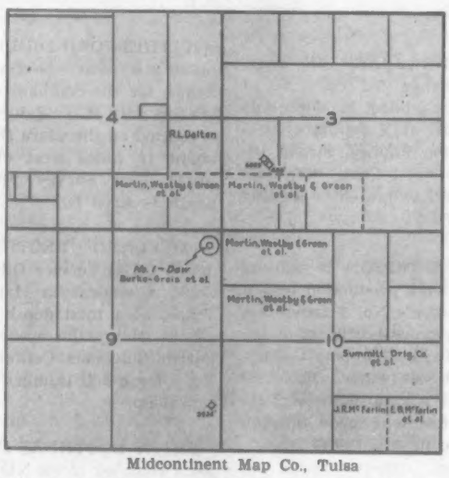
Shell Oil Co., Inc.'s No. 1 Camp, C NW NW Section 12-11-8, old well in Dill pool, plugged back and abandoned at 3,930 ft. Same company's No. 2 Camp, C W½ SW NW Section 12-11-8, old well, plugged back and abandoned at 3,916 ft.

Doak's No. 1 Lowe, NW SE NE Section 16-10-11, Weeetka area, Okfuskee County, Cromwell sand 2,826 ft., total depth 2,855 ft., 125 bbl. of 38-gravity oil and 115 bbl. of water.

Pontotoc County

Gulf Oil Corp.'s No. 2 Watson, NE NW NE Section 35-5-4, Bebee area, Pontotoc County, dolomite 2,565 ft., total depth 2,610 ft., acidized, 113 bbl. of oil.

Davis' No. 1 Chandler, NW NE SW Section 35-5-7, Gilcrease sand 2,340 ft., total depth 2,442 ft., plugged back to 2,418 ft., shot, pumped 65 bbl. of 29-gravity oil, 35 bbl. of water. Minton's No. 1 Chandler, SW SE NW Section 35-5-7, sand 2,388 ft., total depth 2,416 ft., shot, pumped 35 bbl. of 31-gravity oil, 55 bbl. of water.



Midcontinent Map Co., Tulsa

Burke-Greis Oil Co. and others No. 1 Dew, Section 9-12-9, wildcat on a 500-acre block, northwest of Okemah, Okfuskee County, has started work

Sinclair Prairie Oil Co.'s No. 6 Moody B, SE NW NW Section 22-2n-7, Fitts area, old well, plugged back, total depth 3,878 ft., 10 bbl. of oil. Same company's No. 2 Vivian, NW SE NW Section 22-2n-7, old well plugged back, total depth 3,863 ft., 11 bbl. of oil.

Creek County

Sinclair Prairie Oil Co.'s No. 39 Dacon, NW NE SE Section 16-17-7, Creek County, Bartlesville sand 2,638 ft., total depth 2,757 ft., shot, pumped 15 bbl. of oil and 37 bbl. of water.

Strozier Drilling Co.'s No. 1 Turner, NW NW SW Section 7-16-12, total depth 2,437 ft., dry and abandoned.

Okmulgee County

Thirteen Oil Co.'s No. 3-A Champion, CWL SW NW Section 28-14-14, Okmulgee County, total depth 1,245 ft., pumped 3 bbl. of oil.

O. K. Detrick's No. 1-B Lumpkins, NE NW NE Section 34-14-14, total depth 1,150 ft., pumped 5 bbl. of oil.

Link Oil Co.'s No. 4 Virgil, NW NE NE Section 24-15-14, total depth 2,169 ft., dry and abandoned.

Seminole County

Culver & Burton's No. 1 Swan D, NE SE SW Section 3-5-5, Seminole County, Hunton lime 2,454 ft., total depth 2,657 ft., potential 285 bbl. of oil. T. & N. Co.'s No. 1 Reed, SW SW NE Section 3-5-5, Hunton lime 2,616 ft., total depth 2,750 ft., set 7-in. casing 2,670 ft., swabbed 540 bbl. of oil and 60 bbl. of water in 24 hours, pumped 185 bbl. of oil and 460 bbl. of water daily.

Texas Co.'s No. 3 Eliza, SW NW SE Section 19-7-8, old twin well, plugged back, recompleted for 70 bbl. of oil daily at 3,109 ft. Sinclair Prairie Oil Co.'s No. 3 Polly, SE SW NW Section 3-9-6, old well plugged back, recompleted at 4,652 ft. for 60 bbl. of oil.

Estimated Daily Production

Estimated daily production for Oklahoma for the week ended February 24, and for the preceding week, was as follows:

	Barrels	
	Feb. 25	Feb. 17
Allen	5,725	5,875
Billings	6,450	6,625
Burbank	6,825	7,300
South Burbank	8,525	8,750
Balance Osage	16,500	17,000
Blackwell district	3,700	3,750
Bristow-Slick	6,125	6,375
Chandler	1,425	1,450
Crescent	2,275	2,350
Cromwell	2,775	2,950
Cushing-Shamrock	9,325	9,675
Duncan	3,725	3,725
Edmond	4,125	4,275
Fish	3,350	3,475
Fitts	20,700	19,550
Jesse	2,200	2,200
Graham-Fox	2,125	1,925
Gray	750	800
Healdton	8,675	8,875
Hewitt	3,675	3,675
Keokuk	3,150	3,150
Konawa	1,175	1,275
Lucien	8,275	8,375
Moore	2,050	2,075
Oklahoma City	99,100	99,800
Olympic	2,425	2,575
Ramsey	4,625	4,875
Sasakwa	1,700	1,725
Sholem-Alechem	2,800	2,850
Seminole district:		
Bowlegs	7,350	7,625
Carr City	2,450	2,475
Dora	2,250	2,375
Earlsboro	4,400	4,625
South Earlsboro	625	625
East Earlsboro	2,200	2,275
Little River	6,650	6,825
East Little River	725	725
Maud	675	700
Mission	1,275	1,275
Seminole	7,250	7,550
East Seminole	1,175	1,175
Searight	2,325	2,375
Total Seminole	39,350	40,625
St. Louis-Pearson	32,150	33,750
Tatums	1,825	1,975
Tonkawa-Garber-Thomas	4,050	4,025
Wewoka	1,900	1,825
Yale-Jennings	3,500	3,550
Other pools	93,550	96,500
Total Oklahoma	420,300	429,350

Wagoner County

F. G. Breshear's No. 1 Tucker, SE SW SE Section 17-16-18, Wagoner County, abandoned at 1,210 ft., total depth.

W. A. Schmidt's No. 4 Porter, NE SW SE SW Section 23-17-15, total depth 1,041 ft., 100 bbl. of oil.

W. F. Starnes' No. 1-A Nill, C E½ SW SE SE Section 29-17-15, total depth 1,180 ft., dry and abandoned.

In Muskogee County Metzger and others' No. 1 Kerr, SE SE NE Section 14-14-18, total depth 1,210 ft., dry and abandoned.

Osage County

Olson Drilling Co.'s No. 4 Soldani, SW SW NW Section 24-26-4, Osage County, lime at 3,285 ft., total depth 3,293 ft., dry and abandoned.

Moore Oil Co.'s No. 33 Osage, C E½ SE SW SW Section 9-21-9, total depth 2,608 ft., 175 bbl. of oil. Sagamore Oil Co.'s No. 405 Osage, NW NE SW NE Section 36-28-10, total depth 819 ft., 890,000 cu. ft. of gas. Charles Petroleum Co.'s No. 1 Osage, NE NE SE Section 9-28-11, total depth 1,020 ft., 26 bbl. of oil.

(Continued on Page 99)

Canadian Fields

By VICTOR LAURISTON

CHATHAM, Ontario, Feb. 24.—Unrevised official figures show that crude petroleum and naphtha production from all Canadian fields in 1939 totaled 7,837,503 bbl. compared with 6,965,457 bbl. in 1938 and 2,996,033 bbl. in 1937. The final figures for 1939 were somewhat in excess of preliminary estimates.

Comparative figures for the various producing areas are as follows:

	Barrels	
	1939	1938
New Brunswick ..	20,101	23,081
Ontario	205,978	172,641
Alberta	7,594,411	6,742,039
N. W. Territory ...	17,013	27,696

Turner Valley Allowables

The Alberta Conservation Board has announced a temporary reduction in the aggregate allowable of Turner Valley crude wells from 21,000 to 17,500 bbl. a day, effective February 20. The new aggregate is for 99 crude producers, while the old allowable was for 96.

Turner Valley Completions

In North Turner Valley, Home Oil Co.'s No. 4, LSD 9, Section 28-20-3w5, finished in the lime at 8,332 ft., showed combined initial flush production after final acidizing of around 2,700 bbl. a day from the two porous horizons, and has been given temporary allowable of 300 bbl. a day, pending completion of official tests.

Home's No. 3, LSD 1, Section 33-20-3w5, had finished drilling below 8,100 ft. and was preparing to acidize and test production. Drill-stem tests of the upper porous horizon of the lime showed 9 bbl. an hour natural flow, compared with 7 bbl. at Home's No. 4, so that a larger producer is looked for.

In Section 8-19-2w5, West Central field, South West Petroleum Co.'s No. 3, LSD 3, finished 447 ft. in the Madison lime at 7,167 ft. After initial acidization it showed a flush of 1,400 bbl. in 12 hours, indicating that it will be one of the largest wells in the field. Temporary allowable has been set at 300 bbl. a day pending completion of official tests. South West Petroleum Co., a subsidiary of Imperial Oil, Ltd., controls the whole of Section 8. Its Nos. 1 and 2, drilled some years ago in the northeast portion of the section, were small naphtha producers. Completion of No. 3, in the southwest portion of the section, as a large producer practically proves seven locations on the west side, and will likely lead to further development in Sections 17 and 18 to the north and west. South West Petroleum Co. will probably continue systematic development of its acreage, with Royalite Oil Co. handling the drilling.

In Section 31-18-2w5, west of the main crude area, Anglo-Canadian Oil Co.'s No. 7, LSD 9, finished 461 ft. in the Madison at 8,391 ft., showed 700 bbl. a day before and 1,800 bbl. after initial acidizing. It has been acidized with an additional 4,000 gal. and is making official test, with temporary allowable set at 300 bbl.

In the Steveville field, east of Calgary, Standard of British Columbia's No. 1 Princess, LSD 13, Section 22-20-12w4, bottoming at 5,254 ft., blew wide open for nearly a week after gas was encountered some 1,284 ft. in the Devonian limestone. The flow was estimated 30,000,000 to 40,000,000 cu. ft. a day with about 5 bbl. of heavy crude accompanied by small quantities of sulfur water, apparently from an upper horizon. The hole finally bridged, when the crew pumped a baroid-mud solution into it, and got the flow under control. It is planned to drill deeper into the lime, and later come back and test production.

A number of projects are being arranged for development work in wildcat areas in Ontario. Manitoulin Island in Georgian Bay is one of the most active of these. A Toronto group has leased more than 40,000 acres, of which 10,000 acres have been subleased on a royalty basis, with definite arrangements for drilling.

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Wood County Deep Test Has Small Oriskany Gas Show

By STAFF CORRESPONDENT

PITTSBURGH, Pa., Feb. 26.—In Wood County, West Virginia, the deep test of the United Carbon Co. and others on the J. K. Grimm and others farm in Steel district has a small volume of gas in the Oriskany sand. The top of the Corniferous lime was at 4,624 ft.; Oriskany, 4,748 ft., with 42 ft. of sand to 4,790 ft. From 4,790 to 4,794 ft. there was a sandy-lime break, with pure sand following for a few feet, and then the characteristic lime of the Helderberg.

At 4,753 to 4,755 ft. there was a volume of about 130,000 cu. ft. of gas a day, and the sand section has been or will be shot with 30 qt. If it makes a commercial well it will be an incentive for additional tests on the east flank of the Parkersburg syncline. Two prior tests, the W. O. Caplinger and the C. D. White, found the Oriskany too tightly cemented to produce. The new well is considerably higher on structure.

In Pennsylvania another test is starting on Chestnut Ridge in Fayette County, where the Peoples Natural Gas Co. has staked a location on the Piedmont Coal Co. lease in South Union Township, about 450 ft. south and slightly west of U. S. Route 40 at Point Lookout. It is also slightly west of the latest test by the New Penn Development Co. on the Piedmont Coal Co. land north of Route 40 in North Union Township, which is waiting for warmer weather to complete.

SOUTHEAST OHIO

In Coshocton County, Southeast Ohio, in the SW¼ Section 19 Pike Township the Lupher Oil Co. completed a test on the A. Bryan farm in the Clinton formation at 3,148 ft. It will make a 20-bbl. pumper.

In Muskingum County, Blue Rock Oil & Gas Co. completed a dry hole on the Ralph Mautz farm in Section 5, Brush Creek Township, through Medina sand to 4,032 ft.

In Medina County Marine Trust Co., for the Dymo Oil Co., completed several 5-bbl. producers all in Chatham Township.

SOUTHWEST PENNSYLVANIA

In Armstrong County, Pennsylvania, Broman & Dorcey completed No. 5 M. M. Martin in Kiskiminitas Township through Bradford sand to 3,313 ft. It is a gas well gaging 98,000 cu. ft. a day.

In Cowanshannock Township, Armstrong County, T. W. Phillips Gas & Oil Co. is drilling at 2,156 ft. in No. 2 Jacob Boyer, with 88,000 cu. ft. a day showing from the Hundred-foot sand; drilling at 2,738 ft. in No. 2 Harry Boyer, and at 1,557 ft. in the John McKinney test. Peoples Natural Gas Co. set 10-in. casing at 596 ft. in the A. S. Rearick test. Apollo Gas Co. is testing Bradford sand at 3,774 ft. in the Hulda Bleakney test.

In Boggs Township, Armstrong County, Humphrey, Stone & McCall Corp. is clearing the location for the W. A. Dill test. In Kittanning Township Equitable Gas Co. is drilling at 1,979 ft. in the N. D. Heilman test, and John Wray is down 185 ft., starting the Benjamin Miller test.

In Plum Creek Township, Armstrong County, Peoples Natural Gas Co. is drilling at 530 ft. on the Frank Smith farm; T. W. Phillips Gas & Oil Co. is building rig on the Joseph Cessna farm; Equitable Gas Co. is rigging up the Agnes Prugh test; Shelocta Gas Co. is rigging up on the Virginia Schaeffer land. In South Buffalo Township, W. A. Baker is drilling at 1,250 ft. on the James Bush farm. In Wayne Township, Penn Wayne Gas Co. is drilling at 770 ft. on the Seymore Paunch farm.

Indiana-Clarion-Westmoreland

In Indiana County, J. Cloid Rinn and others completed a gas well on the Perdon heirs' farm in Washington Township in the Thirty-foot sand at 1,425 ft. It gages 787,000 cu. ft. a day. In Center Township T. W. Phillips Gas & Oil Co. is fishing for tools and line at 2,854 ft. in the R. & P. Coal Co. test, and in White Township is drilling at 2,727 ft. on the H. B. Deabenderfer land. In South Mahoning Township Equitable Gas Co. is down 2,700 ft. in No. 3 D. W. Raraigh.

In Clarion County G. W. Hall is drilling at 650 ft. on the C. Fairman farm in Limestone Township. In Porter Township T. Swartzfager and others are drilling at 850 ft. on the C. A. Swartzfager farm. In Porter Township T. W. Phillips Gas & Oil Co. is rigged up and shut down on No. 3 T. C. Blair, which is to be deepened.

In Westmoreland County Apollo Gas Co. is drilling at 568 ft. on the D. M. Jones heirs land. Peoples Natural Gas Co. is cleaning out No. 1 H. F. Burgman to deepen from the Fifth sand. Both are in Allegheny Township.

Fayette-Greene

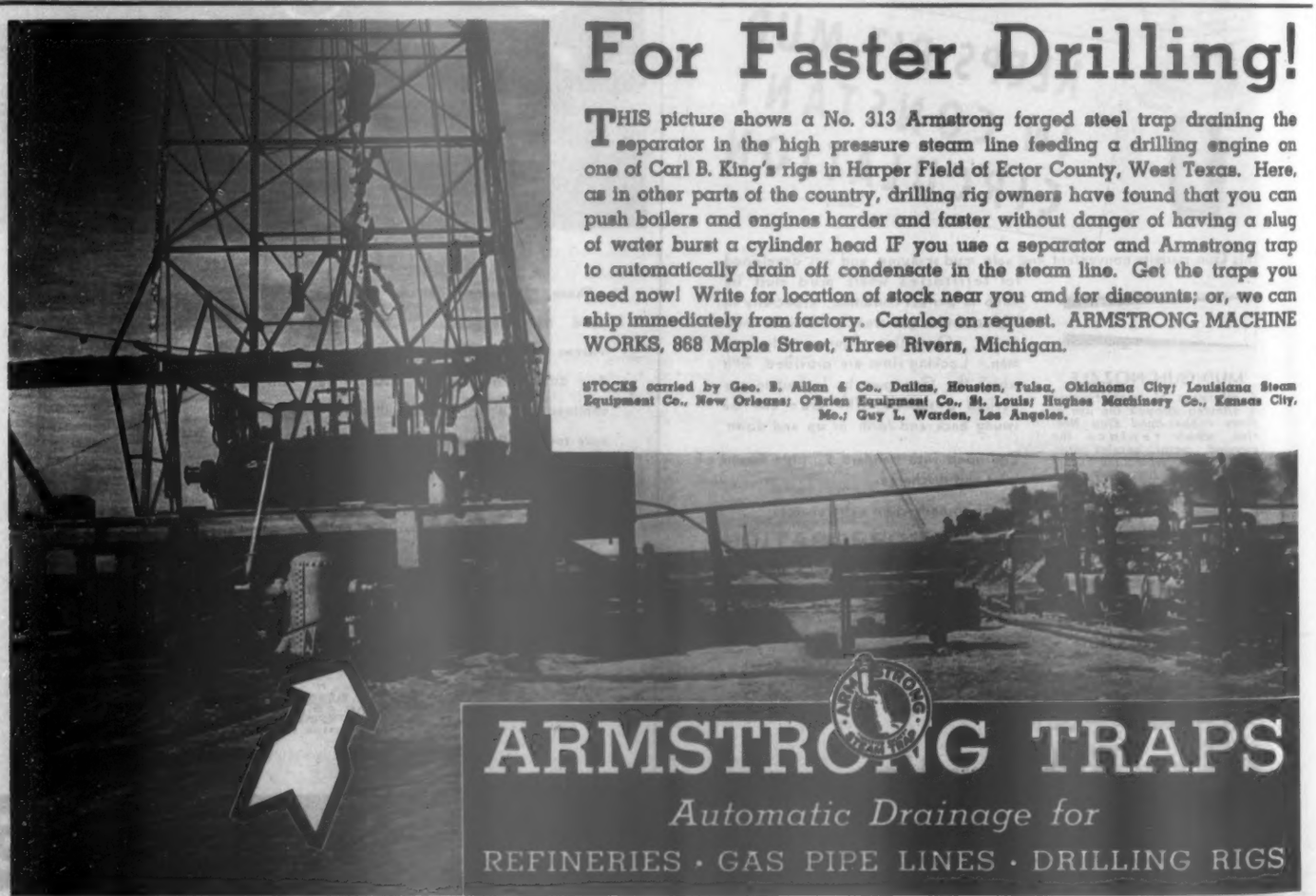
In Nicholson Township, Fayette County, Duquesne Gas Co. is drilling at 1,350 ft. in No. 3 John Demaske. In German Township the Wahler-Powers Gas & Oil Co. is shut down at 2,030 ft. in the Martin Grey test.

In Greene County Judson Bell and others is testing the Injun sand gas on the E. R. Gabler farm in Monongahela Township with Big Injun sand topped at 1,233 ft. and a reported volume of 3,000,000 cu. ft. a day. In Center Township Equitable Gas Co. will deepen No. 2 J. M. Conklin, starting at 2,299 ft. In Greene Township this company is rigging up No. 2 Hugh Keenan. In Richhill Township O. I. Dille and others have rigged No. 2 Madison Hughes. In Franklin Township the Waynesburg Home Gas Co. is drilling at 2,240 ft. in No. 1 Nancy Rush.

Washington County

In South Franklin Township, Washington County,

(Continued on Page 100)



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Rocky Mountain Area

By T. R. INGRAM

Fourth Producing Horizon in Northern Eddy County, N. M.

DENVER, Colo., Feb. 26.—Several leases on government land within the boundaries of known producing oil or gas fields in Colorado and Wyoming offered for sale at auction recently failed to attract any bidders in one instance and brought only the minimum bids in the others. A 40-acre tract in the NW NW Section 32-58n-99w, Elk basin field, brought only one bid, $1 per acre, by Robert Connaghan, of Cheyenne. Two tracts in the Garland field also brought the minimum of $1 per acre from a single bidder, Fred Hopka, of Cheyenne. Unit No. 1, 51 acres in the SW SW Section 20-56n-97w, and Unit No. 2, 40 acres in the SE NW Section 32-56n-97w, are within the unitized area in the Ohio Oil Co.-Utah Southern Oil Co. unit and the Kinney-Coastal unit, and sale was subject to the acreage being put into the unit in which it is located. Forty acres in the SE NE Section 24-12n-101w, West Hiawatha gas field, in Colorado, failed to bring any offers.

The best completion in the Rocky Mountain area was the Minnelusa Oil Corp.'s No. 1-B Joss, in Lance Creek, for 2,160 bbl. initial from the Leo sand. The Sinclair-Wyoming Oil Co.'s discovery in the Tensleep in West Ferris, flowed 7½ bbl. an hour in the Tensleep, but ran into water upon drilling deeper. The Mule Creek Oil Co.'s No. 1 Binney-Sessions, in Garland, plugged back to the Frontier and was completed for 1,450,000 cu. ft. of gas.

Cut Bank in Montana had one completion, a 115-bbl. well in the Sundance in the Santa Rita Oil & Gas Co.'s No. 4 Lander.

One deep test in Huerfano County, Colorado, began spudding with the granite as the possible objective. Lance Creek had two new operations, Cut Bank one, and Kevin-Sunburst one.

NEW MEXICO

The indicated discovery of a fourth oil-producing level in the northern part of Eddy County, which affords a several-mile-south extension for the Loco Hills field, centered the attention in the Southeast New Mexico district during the week past.

The test is L. E. Elliott's No. 1 Elliott-Shelby, SE SE SE Section 24-18-29, about 2¾ miles south of the main body of the Loco Hills field. The producing formation is below both that of Loco Hills and of the several recent discoveries southeast of Loco Hills. Oil was found in a lime formation at a depth of 3,424 to 3,482 ft. The formation has been neither shot nor acidized, and no flows of oil have been made. However, considerable oil is reported standing in the hole. The indicated discovery is about 4 miles west and slightly south of the recently opened Kersey area in Section 23-18-30.

Since the discovery of the Loco Hills field, a definite trend of production has been established running southeast from that field. All of the production with the exception of the new indicated discovery is believed to be from the same stratum, the regional dip being to the east. The trend includes the Loco Hills field, the Kersey area, the Payton-McClay area and the Sullivan area. The trend extends some 12 miles to the southeast.

SOUTHEAST NEW MEXICO COMPLETIONS

Eddy County

In the High Lonesome field M. T. Anderson's No. 1 Hess, SW SW Section 10-16-29, abandoned location. C. B. Buck's No. 1 State, SE cor. SW SW Section 31-16-29, 2,130-48 ft., pumped 45 bbl. daily.

Loco Hills field: R. W. Fair's No. 2-A State, SE cor. SE NW Section 2-18-29, 2,635-53 ft., 220 bbl. in 5 hours. S. P. Yates' No. 4 Brainard, NW SW Section 3-18-29, 2,510-81 ft., 330 bbl. in 11 hours. C. J. Kleiner's No. 3 Watson & Smith, SE SE Section 4-18-29, 2,514-94 ft., 60 bbl. daily. Continental Oil Co.'s No. 1 State, SE SW Section 10-18-19, 2,522-72 ft., 60 bbl. in 2 hours. R. W. Fair's No. 5 Brainard, SE NE Section 10-18-29, 2,590-2,634 ft., 50 bbl. per hour.

Red Lakes field: F. G. Keyes' No. 4 Red Gulch, Section 4-17-28, plugged and abandoned at 1,923 ft.

Shugart field: Addison's No. 1 Sullivan, NE NE Section 29-18-31, 3,568-73 ft., 74 bbl. pumping.

Lea County

In the Maljamar field E. G. Woods' No. 1 Simon, NW NE Section 29-17-32, 3,724-66 ft., 250 bbl. naturally daily.

Penrose field: Gulf Oil Corp.'s No. 1 Eaves, NE NE Section 10-22-37, 3,630-3,700 ft., 110 bbl. daily. Two State Drilling Co.'s No. 5-B State, SE NE Section 16-22-37, 3,625-93 ft., 132 bbl. daily. Gulf Oil Corp.'s No. 3-C Christmas, SW NE Section 18-22-37, 3,655-3,720 ft., 1,110 bbl. in 12 hours.

Skelly field: Peters' No. 4 T. O. May, SW SE NE Section 34-22-37, 3,550-3,643 ft., 200 bbl. daily.

Langlie field: Leonard Oil Co.'s No. 1 Johns, NW¼ Section 20-25-37, 3,109-3,350 ft., 52 bbl. oil and 1,000,000 ft. gas daily.

NORTHWEST NEW MEXICO

Bernalillo County

Norins Realty Co., Inc.'s No. 2 North Albuquerque, NE SE NW Sec. 19-11n-4e. S.D. 4,710 ft.
Norins Realty Co., Inc.'s No. 2 Pajarito, Sec. 22-9n-1e. S.D. 2,000 ft.

McKinley County

The Petroleum Products Corp., which is operating the Hospah field, has completed its refinery at Prewitt, on the Santa Fe Railroad 32 miles south of the pool, and is making test runs. Oil is trucked from the field to the refinery.

Petroleum Products Corp.'s No. 7 Hospah, C SW SW Sec. 36-18n-9w. Spd. to 500 ft. and S.D. acct. of weather.

San Miguel County

Ben E. Keith's No. 1-X McCune, SW SE SW Sec. 32-16n-12e. Drlg. L. 1,200 ft.

Socorro County

Joiner Oil Corp.'s No. 1 Belen Grant, SE NW Sec. 16-3n-1e. T.D. 600 ft.; prep. to cmt. 10-in. on bttm.

San Juan County

The Continental Oil Co.'s No. 103 Rattlesnake, SW SE SW Section 12-29n-19w, at the southern end of the pool, had water in the sand at 792-802 ft. and was plugged and abandoned.

Kutz Deep Test, Inc.'s No. 1 Govt., C NW NW Sec. 28-28n-10w. T.D. 560 ft.; landed 12½-in. on bttm.

Angel Peak Oil Co.'s No. 9 fee, C NE NW Sec. 24-28n-11w. Drlg. 1,700 ft.
Continental Oil Co.'s No. 100 Rattlesnake, SE NW NE Sec. 2-29n-19w. T.D. 7,407 ft.; P.B. to 6,676 ft.; tstg.

Valencia County

C. A. Grober et al's No. 1 Fuqua, NE NE Sec. 19-5n-3e. Cg. below 3,850 ft.

COLORADO

El Paso County

F. F. Hintze et al's No. 1 State, CEL SE SE Sec. 16-11s-66w. S.D. 975 ft.; will run 8-in. to S.O.W. at 885-95 ft.

Huerfano County

I. E. Sideman-White et al's No. 1 Martinez, C SW NE Sec. 33-26n-67w. Spdg. 100 ft. with rotary equip. to go to the granite.

La Plata County

Nick Spatter's No. 1-X Bryce, C SW SW Sec. 31-33n-9w. Drlg. below 2,950 ft.

Larimer County

L. R. Steele et al's No. 1 Mundt, NE NE NE Sec. 7-3n-69w. Drlg. 1,735 ft. in Hyg.; S.G.

Montezuma County

McElmo Oil Co.'s No. 1 West, NE NW NE Sec. 31-36n-17w. Drlg. 5,285 ft. in blk. L.&sh.; S.S.O.; est. 2,000,000 cu. ft. gas at 5,241 ft.

Park County

South Park Oil Co.'s No. 1 Lemar, NE NE SE Sec. 34-11s-75w. Drlg. below 7,172 ft.

Moffat County

Great Divide Pet. Co.'s No. 1 Wyatt, SE¼ Sec. 4-6n-92w. S.D. 724 ft.; 10-in. froze at 650 ft.; will res. as soon as weather conditions improve.

Routt County

L. C. Craig-E. L. Moore's No. 1-X Erwin, C SW NE Sec. 33-7n-85w. T.D. 2,220 ft.; trying to reemt. 6⅝-in. at 2,055 ft.

Washington County

Thurman Oil Tr.'s No. 1 Ruby, NW NW SW Sec. 3-5s-52w. S.D. 1,360 ft.; to run csg. and R.U.C.T.

WYOMING

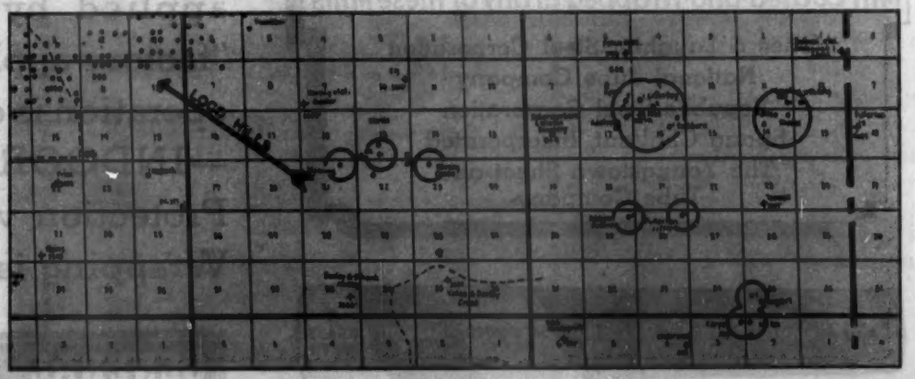
Big Horn County

The Mule Creek Oil Co.'s No. 1 Binney-Sessions, SE NW NW Section 34-56n-97w, Garland field, an old gas well completed in the Frontier at 1,804 ft., was deepened to 2,205 ft. and was then plugged back to the original depth and recompleted for 1,450,000 cu. ft. a day through the casing and 941,000 cu. ft. through the tubing.

Frank S. Scott's No. 1 Robertson, SE SE SE Sec. 6-54n-93w. S.D. 650 ft.; acct. weather.
Yale Oil Corp.'s No. 1 Simonson, Lot 53, Sec. 34-55n-97w. Drlg. 3,376 ft.

Carbon County

The Sinclair-Wyoming Oil Co.'s No. 4-E, a discovery



Zingery Oil Map Co., Fort Worth

The circled areas show the trend of production southeast for the Loco Hills field of Eddy County. With regional dip in that direction, all production is believed to be from the same stratum

in the Tensleep sand, flowed at the rate of 7½ bbl. an hour on a test at 4,310 ft. It was then deepened to 4,316 ft. and picked up water in the base of the sand. It will plug back and complete in the upper part of the sand. The 7-in. was cemented at 4,273 ft.

Tri-State O. & R. Co.'s No. 17, NW SE NW Sec. 20-21n-80w. Drlg. 578 ft.; 4¾-in. cmtd. at 576 ft.
Sinclair-Wyoming Oil Co.'s No. 4-E, C SE SW Sec. 29 26n-87w. T.D. 4,316 ft.; will P.B. and comp. in upper Tensleep.
Albert Dev. Synd.'s No. 1 Boeke, SW NW Sec. 18-25n-79w. S.D.O. 922 ft., in grnt.

Converse County

Shawnee Expl. Co.'s No. 1 Salisbury, SE SW NE Sec. 27-32n-69w. Rdy. to spd.

Fremont County

Lincoln O. & G. Co.'s No. 8 Tribal, C NE SW Sec. 23-1s-1e. T.D. 457 ft.; C.O. at 325 ft.
H. C. Harris et al's No. 1 Govt., SE NW NW Sec. 23-21n-117w. Drlg. 2,691 ft.
F. F. Hintze's No. 1 Govt., CWL NW NW Sec. 7-28n-92w. T.D. 1,135 ft.; fsg.

Hot Springs County

Oscar B. Grace's No. 5 Govt., SE NW Sec. 21-43n-92w. Drlg. 200 ft.
Campbell et al's No. 2 Kyne, NW SE SW Sec. 22-43n-92w. T.D. 60 ft.; rng. 8¼-in. for W.S.O.

Natrona County

General Pet. Corp.'s No. 1-21-G, NW NW NW Sec. 21-35n-77w. Drlg. 6,927 ft.; through Wall Ck. sd.; T. 6,710 ft.; cd. sat.

Niobrara County

Reports in Denver a few days ago that the Department of the Interior was preparing to challenge the titles on approximately 2,500 acres of land in the Lance Creek field on which are a number of large producing wells was confirmed Thursday in press dispatches from Washington, D. C. Secretary Ickes was quoted as saying that he expected to set a date shortly for hearings on the Government's 31 cases in which it will seek to recover title. These lands were taken up under the old placer-mining laws prior to the enactment of the oil leasing act of February 25, 1920. The law required a specified amount of work to be done annually until a discovery was made and then the land could be patented. Under such patents the holder of the claims does not have to pay any royalty. Mr. Ickes claims that the locators lost their rights under the leasing act. The principal operators on these claims are the Buck Creek Oil Co., a subsidiary of the Continental Oil Co., and the Ohio Oil Co. If the Government should be successful, it was stated that it might recover "not less than $10,000,000 in oil royalties"

It is regarded as certain that a most vigorous resistance will be made to the Government's claims. The nature of these titles must have been known to Secretary Ickes when he approved a unit agreement for the operation of the field and also when contracts for the sale of oil from the fields were made on several occasions in the past few years. There are many of the old placer-mining claims in Wyoming which have been validated. Practically all of the government land in the Salt Creek field originally was taken up under such filings.

An engineering staff under the direction of V. J. Hendrickson, petroleum engineer of Denver, working in cooperation with the U. S. Bureau of Mines, has been engaged for about a month in making a survey of Lance Creek with a view to determining the desirability of repressuring the Leo sand. The report of the committee is expected to be ready by April 1. Part of the expense of the survey is being borne by independent operators as well as operators in the unit. The independents, although benefiting from the repressuring of the Sundance horizon, did not participate in the cost of installation of equipment. However, it is believed they will join in this movement if the committee recommends the undertaking and the unit decides to undertake the work. The supply of gas in the field is believed ample for all requirements. The Sundance sand is repressured through key wells on the top of the structure and the pressure benefits the wells on the flanks where most of the independents operate.

There was one completion and two new operations in the field. The Minnelusa Oil Corp.'s No. 1-B Joss, NE SW NW Section 7-35n-65w, flowed 2,160 bbl. the first 24 hours through the tubing at 5,439 ft., total depth, from the Leo sand. The 7-in. was cemented at 5,418 ft.

Continental Oil Co.'s No. 6-B Dielman, NE SW NW Sec. 8-35n-65w. Loc.; (first report).
Minnelusa Oil Corp.'s No. 1 Joss, NE SE NW Sec. 6-35n-65w. O.W.D.D. from 4,080 ft.; C.O.
Minnelusa Oil Corp.-MacKinnie O. & D. Co.'s No. 8 Thompson, SW NE NW Sec. 7-35n-65w. Drlg. 3,690 ft.
Minnelusa Oil Corp.'s No. 1 Ford, SW NW NE Sec. 33-36n-65w. Drlg. 4,697 ft.
Continental Oil Co.'s No. 6 Apex-O.P.C.-4, SW NW NW Sec. 35-36n-65w. B.R.
Ohio Oil Co.'s No. 14 Carrie Putnam, NW SW SW Sec. 33-36n-65w. Drlg. 1,885 ft.
Ohio Oil Co.'s No. 15 Carrie Putnam, NW NE SW Sec. 33-36n-65w. B.R.
Continental Oil Co.'s No. 10-B Schuricht, SE SE SE Sec. 6-35n-65w. Rig; M.I.M.
Continental Oil Co.'s No. 6-A Schuricht, SE NE SE Sec. 6-35n-65w. Drlg. r.b. 4,280 ft.; cd. sat. Sundance at 3,887-3,971 ft.
Continental Oil Co.'s No. 5 Apex O.P.C.-1, NE SW NE Sec. 34-36n-65w. Drlg. 4,094 ft.
Argo Oil Co.'s No. 8 Ford, SE NE NW Sec. 33-36n-65w. T.D. 5,351 ft.; T. Leo sd. 5,346 ft.; cd. excellent sat.; cmtd. 7-in. on top of Leo.
Argo Oil Co.'s No. 12-A Elliott, SE NW NE Sec. 7-35n 65w. T.D. 5,181 ft.; cmtd. 7-in. at 5,165 ft.; W.O.C.
Minnelusa Oil Corp.'s No. 4 H. & M., NE NE SE Sec. 7-35n-65w. Drlg. 4,980 ft.; T. first Sundance 4,140 ft.
Ohio Oil Co.'s No. 6 Rohlff, SE NW NE Sec. 32-36n-65w. Drlg. 4,204 ft.; T. first Sundance 4,123 ft.
H. D. Moore's No. 1 Berggren, SE NW Sec. 23-35n-63w. Drlg. 2,526 ft.

Sublette County

Marvel Oil Co.'s No. 1-H Govt., CEL NE SE Sec. 28-27n-113w. S.D. after R.U.
North La Barge Oil Co.'s No. 1 Govt., SW NE SE Sec. 8-27n-113w. S.D. 1,567 ft.

Sweetwater County

Sinclair-Wyoming Oil Co.'s No. 91-A, SE NE NE Sec. 10-26n-90w. Drlg. 850 ft.
Vermillion Oil Co.'s No. 2 Govt., SW SW SW Sec. 7-12n-99w. Drlg. 2,516 ft.; dry sd. 2,475-2,500 ft.
Sinclair-Wyoming Oil Co.'s No. 90-A, SW SW NW Sec. 11-26n-90w. Drlg. 2,069 ft. in Sundance sd.

Weston County

Bruce C. Teeter's No. 1 State, C SW NE Sec. 36-42n-61w. S.D. 2,270 ft. (C.D.); may go to Bell sd.
Butcher Bros.' No. 5, SW NW NE Sec. 16-46n-63w. R. O.G.

MONTANA

Blaine County

F. J. Buscher's No. 1 Evey, C NE SE Sec. 12-32n-17e. Cmtd. 10-in. on bttm. at 60 ft.; (first report).

Glacier County

Cut Bank had one completion, a producer in the Sundance sand on the west side of the field where some of the biggest wells in the field have been finished in that horizon. This was the Santa Rita Oil & Gas Co.'s No. 4 Lander, C SE SW Section 16-35n-6w, which swabbed 115 bbl. the first 24 hours at 2,990 ft., total depth. It had the Sunburst at 2,960-83 ft. with a show of gas at

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2,965 ft. and slight saturation at 2,965-83 ft. It did not go to the Cut Bank sand.

Santa Rita O. & G. Co.'s No. 10 Tribal, NW NW NW Sec. 15-35n-6w. M.I.M.; (first report).
A. B. Cobb's No. 5 Van Demark, CSL SE NE Sec. 35-35n-6w. Loc.
A. B. Cobb's No. 5 Walberger, CNL NE SE Sec. 35-35n-6w. M.I.M.
Glacier Prod. Co.'s No. 2 Maltby, C NE NE Sec. 8-33n-5w. Drlg. 315 ft.
Glacier Prod. Co.'s No. 1 Barrington, CSL NE SW Sec. 19-33n-5w. Drlg. 425 ft.
Glacier Prod. Co.'s No. 1 Evans, C SW NE Sec. 21-33n-5w. Drlg. 540 ft.
Newell & Chandler's No. 1 Anderson, C NE NW Sec. 1-36n-6w. Drlg. 515 ft.
Santa Rita O. & G. Co.'s No. 4 Stahl, CSL NW SE Sec. 20-33n-5w. T.D. 110 ft.; str. crkd. hole.
British American Oil Co.'s No. 12 Tribal, C SE NW Sec. 34-35n-6w. Drlg. 1,925 ft.
R. C. Tarrant's No. 5 State, NW NE SE Sec. 36-34-6w. Drlg. 1,650 ft.
Helmac, Tr.'s No. 3 Govt., Lot 3, Sec. 32-33n-5w. R.O.G.
A. B. Cobb's No. 1 Churi, C SW NW Sec. 30-37n-4w. Drlg. 2,040 ft.
Cobb-Reagan's No. 4 Jackson, SW SW SE Sec. 5-32n-6w. R.U.R.

Toole County

Coolidge & Coolidge's No. 3 McCurdy, SE NW SW Sec. 2-35n-3w. Drlg. 100 ft.; (first report).
Mosby Oil Corp.'s No. 3 Pederson, SE NW SE Sec. 7-35n-2w. Drlg. 1,065 ft.; 8¼-in. at 935 ft.
Coolidge & Coolidge's No. 2 McCurdy, NE NW NW Sec. 11-35n-3w. T.D. 1,869 ft.; contact 1,860-69 ft.; 1,600 ft. O.I.H.; installing pmp. equip.
Casper T. Olen's No. 9 Engemoen, NW NE NW Sec. 14-35n-2w. S.D. 70 ft.
L. J. Yealy's No. 14 Shaw, NW SW NE Sec. 35-36n-2w. R.O.G.
Superior Pet. Co.'s No. 3 Haugen, C NE NE Sec. 11-35n-3w. Drlg. 1,225 ft.
Lemac Oil Co.'s No. 1, C NE NE Sec. 27-36n-2w. T.D. 1,906 ft.; contact 1,900-06 ft.; good S.O. in sdy. L.; S.D.

UTAH

Grand County

Reeder Corp.'s No. 1 State, NE NE NE Sec. 16-22s-19e. T.D. 700 ft.; U.R. 8¼-in. to bttm. for W.S.O.

SOUTH DAKOTA

Butte County

Two Top O. & G. Co.'s No. 2, SE NE Sec. 30-10n-6e. T.D. 1,090 ft.; C.O.

Forest City Basin

(Continued from Page 91)

since the first of the year; E. H. Lawhon and others' No. 1 Gottschall, C SE SE Section 18-59-32w, DeKalb County, was reported to have spudded; in the same county, American Oil & Gas Co. was moving in rig at No. 1 Thompson, C SW SW Section 30-58-31w. T. E. Baldwin's No. 1-A Johnson, NW NE NE Section 21-65-15w, Schuyler County, was drilling around 1,075 ft., after bailing failed to disclose oil in the hole, but was expected to plug back and test a showing at 724-31 ft. if nothing is found in the deeper sands.

In the Kansas sector of the basin, McLaughlin Sons Inc.'s No. 1 McLaughlin, SW SE NW Section 4-10-20, Jefferson County, failed to uncover oil production at 1,918 ft., total depth, and was to plug back to about 1,455 ft., where 6,000,000 to 8,000,000 cu. ft. of gas was found in Bartlesville sand. A section of Mississippi lime was acidized without success before plugging back.

Stanolind Oil & Gas Co. has moved a core-drill crew from Brown County, Kansas, to Richardson County, Nebraska, in the Falls City area, and was to work in Townships 1n-15e and 1n-16e.

Pawnee Royalty Co.'s No. 1 Meyer, C NW NW Section 24-1n-15e, about 4 miles west of Falls City, Richardson County, Nebraska, was reported to have found Arbuckle lime, but depth was not announced. Forest City Basin Syndicate's No. 1 Windle, C NW SW Section 11-1n-15e, southeast of Salem, Richardson County, was building derrick. E. V. Jackson, Atchison, Kans., operator was reported preparing to spud his No. 1 Hill, W½ SW Section 32-2n-16e, northwest of Falls City, by March 1.

In Iowa, Phillips Petroleum Co.'s No. 1 Creston, C SE NE Section 31-71-30w, Union County, had 800 ft. of water in the hole at 1,810 ft., but was reported drilling below 1,925 ft.

Oklahoma Fields

(Continued from Page 94)

In Pawnee County Johnson Oil Refining Co.'s No. 13 Findley, CWL NE NW Section 27-20-9, Red Fork sand 2,019 ft., total depth 2,092 ft., plugged back to 2,069 ft., shot, pumped 50 bbl. of oil.

Oklahoma County

Old wells recompleted: Oils, Inc.'s No. 1 Thompson, SW NW NW Section 2-11-3w, plugged back, dry and abandoned at 6,537 ft. Indian Territory Illuminating Oil Co.'s No. 7 Trosper, NE NW SW Section 13-11-3w, plugged back, abandoned at 6,364 ft. Same company's No. 8 Trosper, SW SW NW Section 13-11-3w, plugged back, 173 bbl. of oil at 6,364 ft. Same company's No. 4 Lawrence Place, C S½ SW SW NE Section 15-11-3w, deepened to 6,560 ft., 210 bbl. of oil. Same company's No. 15 Clauer, SW NE SE Section 25-11-3w, deepened to 6,462 ft., 113 bbl. of oil. Jones and others' No. 1 McKeever, NE SE NE SW Section 15-12-3w, plugged back, abandoned at 6,485 ft. Barnsdall Oil Co.'s No. 1 Foraker, NW SW NW NW Section 26-12-3w, plugged back, gaged 3,200,000 cu. ft. of gas at 6,413 ft.

Southwestern Oklahoma

Caddo County: Ohio Oil Co.'s No. 6 Lackey, SE SW NW Section 11-5-9w, Cement field, set 5-in. pipe 3,386 ft., total depth 3,398 ft., flowed 479 bbl. of oil in 4 hours, potential 2,877 bbl.

Stephens County: Helmerich & Payne's No. 1-A Hefner, C E½ NE NE SW Section 12-1n-5w, twin, total depth 5,800 ft., potential 3,672 bbl. of oil.

Beckham County: Westoak Gas Co.'s No. 1 Eason, SE NW NE Section 11-9-25w, Erick field, total depth 3,483 ft., plugged back to 3,450 ft., acidized and shot, gaged 10,000,000 cu. ft. of gas, with 985 lb. rock pressure after 3 days.

Grady County: Alma Oil Co.'s No. 6 Pettit, SW SE SE Section 11-4-8w, Chickasha gas field, total depth 3,985 ft., dry and abandoned.

Comanche County: Kelly and others' No. 1 Gandy, C E½ E½ NE SW Section 35-2n-11w, Lawton area, total depth 300 ft., dry and abandoned.

Jackson County: Gulf Oil Corp.'s No. 6 Eley, NW NW SE Section 10-1n-20w, Altus area, old well, plugged back from 1,841 ft. to 1,545 ft., temporarily abandoned.

Kiowa County: B. & M. Drilling Co.'s No. 1-A Smith, NW SE NW Section 25-7-21w, total depth 1,067 ft., dry and abandoned.

New Operations

Simpson-Roodhouse Drilling Co.'s No. 3 James, SE SE SE Section 9-5-3e, and Patsy Oil Co.'s No. 2 Caldwell, SW NE NE Section 16-5-3, McClain County, building rigs. Gulf Oil Corp.'s No. 4 Watson, NW NW NE Section 35-5-4, Pontotoc County, location. Schaffer's No.

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2-A Schrader, NW SE NE Section 6-6-5, Pottawatomie County, rig for twin well. Deep Rock Oil Corp.'s No. 1 Reed, NW NW SE Section 13-9-7, Seminole County, old well being deepened, drilling at 4,363 ft. Mason's No. 1 Reed, NW NW NE Section 13-9-7, wildcat, spudded. Summit Drilling Co.'s No. 2 Simmer, CEL SE NW Section 18-10-11, Okfuskee County, cellar and pits. Vincent's No. 2 Walker, SW SE NE Section 34-14-10, Creek County, machine. Atkinson's No. 1 Wilkerson, NW NE NW Section 14-22-4, Pawnee County, old wildcat, plugged back to test lime at 3,080-3,240 ft. Helmerich & Payne, Inc.'s No. 2 Graham, SW SW NE Section 12-1n-5w, Stephens County, rig. Lundy's No. 1 Brown, NE NE NE Section 23-1n-9w, Stephens County, location. Henry's No. 2 Henry, NE NW NW Section 15-1n-20w, and Hinton's No. 1 Minor, NW NW NE Section 15-1n-20w, Jackson County, rigging up rotary tools. Fields' No. 5 Oster, NW SW SW Section 27-7-17w, Kiowa County, moving in machine. J. E. Trigg and Hall & Briscoe, Inc.'s No. 1 Hughes, NW NW SW Section 28-13-1e, Oklahoma County, set surface pipe and were to move in rotary tools for Wilcox-sand test.

Eastern Fields

(Continued from Page 96)

Union Gasoline & Oil Corp. is drilling at 135 ft. in No. 828 C. T. Conn. Foley & Williams are fishing at 980 ft. in No. 3 Rankin Clark. In Hanover Township, H. K. Aten and others have reached 1,050 ft. in No. 2 Lee Devitt. In Robinson Township, R. M. Duden and others are drilling at 1,700 ft. in the Herman Baiers test.

In South Fayette Township, Allegheny County, the Equitable Gas Co. has reached 2,100 ft. on the James Hickman farm.

Deep Tests

In Beaver County, John T. Galey and others have pulled the tubing and casing in the former Oriskany gas well on the James Tennis farm in South Beaver County preparatory to drilling it down to the Clinton sand.

WEST VIRGINIA

In Roane County Reedy Oil & Gas Co. completed No. 2 Elizabeth Moore heirs in Curtis district in the Salt sand at 1,836 ft. and it is showing 7 bbl. a day.

Gas Wells

In Calhoun County M. C. and G. K. Rogers completed a 212,000-cu. ft. gas well on the D. M. Miller farm in Sheridan district in Injun sand at 2,331 ft.

In Clay County, Elk River Gas Co. completed a test on the Charles A. Ray and others lease in Pleasant district at 2,436 ft. with 341,000 cu. ft. of gas a day at 2,385-2,432 ft. In this district Thompson Gas Co. completed No. 43-T in the Salt sand at 924½ ft. and it gages 539,000 cu. ft. a day.

In Gilmer County Pittsburgh & West Virginia Gas Co. completed No. 7720 John R. Hays in Glenville district at 1,707 ft., with 125,000 cu. ft. of gas at 1,660-62 ft.

In Tyler County Cease Baker and others drilled a dry hole on the Armstrong Smith farm in Ellsworth district to 550 ft.

In Wayne County Southern West Virginia Gas Corp. deepened No. 9 B. J. Pritchard in Stonewall district from 1,855 ft. to 2,741 ft., with the Brown shale at 2,295-2,730 ft. and 92,000 cu. ft. of gas a day.

Oriskany Gas Fields

In Poca district, Kanawha County, two tests were completed, Columbian Carbon Co.'s test on B. H. Richards' farm had Corniferous lime at 5,126 ft.; Oriskany 5,241 ft.; total depth, 5323 ft., and final gage before shot of 900,000 cu. ft. a day. In this district this company completed the Walter Payne test with the Corniferous lime topped at 5,000 ft.; Oriskany, 5,118 ft.; total depth, 5,207 ft., and a final gage of 582,000 cu. ft. a day.

In Elk district the Linden Drilling Co. completed the S. D. Robinson test at 1,709 ft. Weir sand was at 1,555-1,728 ft. and a gage of 1,083,000 cu. ft a day from the Weir. In Malden district United Fuel Gas Co. completed No. 4848 Mattie J. Krantz, with 103,000 cu. ft. of gas a day at 2,015-2,165 ft.

In Poca district Columbian Carbon Co. made a location on the Joseph Hughart farm, elevation 902.5 ft.; is spudding the V. E. King and others test; is down 2,938 ft. on the Ida B. Mairs and others land, and had reached 5,011 ft. deepening No. 1 W. S. Jones.

New Locations

Cabell County: Monickel Gas Co.'s No. 1 J. B. Weaver, Grant district, elevation 1,086.5 ft.

Calhoun County: Virginian Gasoline & Oil Co.'s No. 2 Eva D. Hathaway, Sherman district, elevation 960 ft.

Rocky Mountain Runs

Production estimates for week ended February 24:

WYOMING

	Barrels
Salt Creek	15,050
Big Muddy	1,150
Byron	4,150
Frannie	1,550
Garland	3,350
Grass Creek	1,690
Lance Creek	23,480
Lost Soldier	1,660
Oregon basin	3,750
Rock River	2,500
Wertz	3,960
Miscellaneous	5,350
Total Wyoming	67,640

MONTANA

Border	80
Cat Creek	480
Cut Bank	10,300
Dry Creek	460
Pondera	800
Kevin-Sunburst	4,850
Total Montana	16,970

COLORADO

Iles dome	1,770
Wilson Creek	540
Miscellaneous	1,560
Total Colorado	3,870

NEW MEXICO

Cooper	3,240
Eunice	19,870
Hardy	3,520
Hobbs	13,910
Langlie	4,830
Mattix	4,960
Monument	20,630
Penrose	3,900
Skelly	1,500
South Eunice	4,200
South Lovington	1,550
Vacuum	12,330
Artesia-Maljamar	15,710
Miscellaneous	4,000
Total New Mexico	114,150

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Texas and Louisiana Gulf

By
NEIL WILLIAMS

Villa Platte Wilcox Sand Pay Is Extended Over a Big Area

HOUSTON, Tex., Feb. 26.—An important southeast extension to the Wilcox-sand production in the Villa Platte field, Evangeline Parish, and testing of an important outpost well in the La Fourche Crossing field, La Fourche Parish, coastal Louisiana, held the attention of operators in the Gulf Coast district in the past week.

Several hundred additional acres were opened for development in the Villa Platte field, Evangeline Parish, as Danciger Oil & Refining Co. completed No. 1 J. A. Vidrene for an initial production of 380 bbl. per day flowing through a ¼-in. choke. Tubing pressure was 1,110 lb. and casing pressure 1,800 lb. The well was drilled to a total depth of 10,244 ft., and production was obtained by perforating casing in the Tertiary Wilcox sand at 10,133-60 ft. The Wilcox formation was topped at 9,888 ft., and an electrical survey showed saturated sand at 10,130-72 ft., and salt-water sand at 10,195-10,226 ft.

The well is in Section 1-4s-2e, approximately 2,200 ft. southeast of production. As a result of the completion, royalty buying has extended a considerable distance south and southeast with prices ranging from $1,000 to $1,500 per acre base. With the exception of a few wells, Villa Platte has been developed largely by the Continental Oil Co., with most wells producing from the Sparta sand from 8,900-9,000 ft. Production from the Tertiary Wilcox sand was opened in the field in 1939, and while development of this sand has been confined to a few wells, it is the general opinion that the producing area will exceed that of the Sparta horizon. Midway between the extension producer and the field proper, Amerada Petroleum Corp. staked location for No. 1 Roberie in Section 1-4s-2e, and it is reported that this test will be drilled to a depth of 15,000 ft.

In the La Fourche Crossing field, La Fourche Parish, Mikton Oil Co. was preparing to test No. 2 Martinez, approximately 1,600 ft. southeast of the discovery well. The well was drilled to a total depth of 10,998 ft., and 5½-in. casing was cemented at 10,042 ft. Sand showing oil was cored at 8,689-8,706 ft., with the bottom 3 ft. showing salt water. Hard sand with a distillate odor was logged at 9,634-56 ft., and oil sand at 10,000-06 ft. Salt-water sand was cored at 10,006-20 ft. This is the second well to be drilled on the structure, and the completion of a producing well would open a new horizon for the field, as the discovery well is producing from perforated casing at 10,128-32 ft.

On the Bay Brussel prospect, La Fourche Parish, Tide Water Associated Oil Co. was preparing for a final completion test of No. 1 Louisiana Delta farms. A cement-squeeze job was made at 8,750-60 ft., and the company intends to drill out to 11,280 ft., and perforate casing at 11,270-80 ft. The sand to be tested is reported to have shown better on an electrical survey, and drill-stem testing showed better results than the other sand sections logged at intervals from 8,700 to 11,000 ft.

Another failure was apparently marked up for the Tertiary Wilcox trend, as S. W. Richardson's No. 1 Hyllyer-Edwards, Rapides Parish, topped the Wilcox formation at 7,952 ft., and cored salt-water sand at 7,955-8,000 ft. The well is drilling below 8,267 ft., and is scheduled to be drilled to the contract depth of 8,500 ft., and abandoned. Interest along the trend is centered on two wildcats being drilled by Atlantic Refining Co. in Beauregard Parish. No. 1 Whitmer, Section 26-3s-1w, topped the Cockfield sand at 5,684 ft., and is drilling in shale below 6,395 ft. No. 1 Lutcher Moore Lumber Co., Section 13-5s-12w, is drilling in lime and shale below 7,756 ft. In the Merryville area, California Oil Co. is rigging up for No. 3 Long Bell Lumber Co. in Section 24-5s-11w.

In the Grand Lake field, Cameron Parish, Superior Oil Co. was attempting to recomplete No. 4 State after the well flowed an estimated 25 bbl. of 44-gravity oil per day, and considerable gas, from perforated casing at 8,358-90 ft. If the company is unable to lower the gas-oil ratio, another test will be made by reperforating casing lower in the sand section.

Deep production on the flank of the West Hackberry dome, Cameron Parish, was extended as Superior Oil Co. completed No. 2 Vincent for an initial production of 304 bbl. daily, flowing through a 10/64-in. choke. The well was drilled to a total depth of 8,265 ft., and was completed through perforated casing at 8,210-60 ft.

In St. Mary Parish, Texas Co.'s No. 1 State, located on the old Cote Blanche dome, cored sandy shale with a slight oil show at 7,334-87 ft., and the well is coring in sand below 7,449 ft. This is the first well drilled on this dome in several years, and the progress of the well is being watched with much interest.

On the Erath prospect, Vermilion Parish, Texas Co.'s No. 1 Vermilion Parish School Board is bottomed at 11,562 ft., and the company is fishing for a sidewall sampler at 5,675 ft.

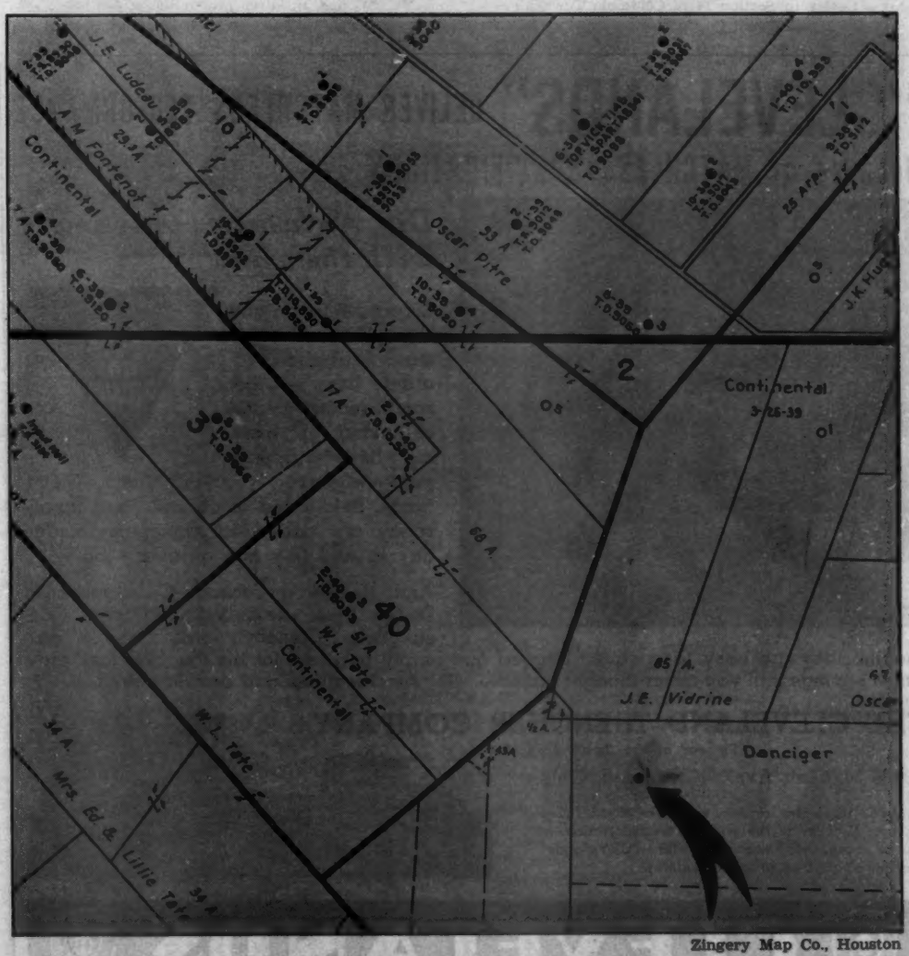
Texas Coast

Along the Texas Coast, Glenn McCarthy extended production in the Anchor field, Brazoria County, approximately 2,000 ft. northwest with the completion of No. 1 Salmon and Momma. Casing was perforated at 9,820-24 ft., and the well flowed 199 bbl. of 49-gravity water-white distillate per day through a ¼-in. bottom-hole choke. Tubing pressure was 2,200 lb. Approximately 2,000 ft. southwest of production, Humble Oil & Refining Co.'s No. 1 Galznik & Taylor is drilling in shale below 10,468 ft. Sand with an oil odor was recovered in cores at 10,361-84 ft. In the same county and located in the Chocolate Bayou field, Glenn McCarthy's No. 1 Andrau, about 1 mile northwest of the discovery well is drilling in shale below 10,985 ft., and his No. 2 Houston Farm Development Co., 3,000 ft. from production, is drilling in sand and shale below 10,911 ft.

Prospect of opening a new field 2½ miles northeast of the Cedar Point field, Chambers County, was not promising as George Anderson's No. 1 Lawrence flowed salt water on a second production test through perforated casing at 7,126-35 ft.

In Montgomery County Dick Schwab and others' No. 1 Foster estate, De La Garza Survey, is drilling in shale below 7,358 ft., and is scheduled to start coring for the Wilcox formation this week. In the Garwood area, Colorado County, W. R. Davis & Co.'s No. 1 McLane, another Wilcox test, was marked off the list as a dry hole when operators abandoned the well after swabbing

(Continued on Page 107)



Zingery Map Co., Houston

Portion of the Villa Platte field, Evangeline Parish, coastal Louisiana, showing location of Danciger Oil & Refining Co.'s No. 1 Vidrene, recently completed to extend Tertiary Wilcox production 2,000 ft. south

Southwestern Fields Record Most of Week's Completions

By OTTO C. PRESSPRICH

SAGINAW, Mich., Feb. 26.—The Overisel Township field of Allegan County moved into the spotlight in Michigan oil development last week as five new wells were completed for production running from 200 to 400 bbl. a day.

For the state the ratio of producer completions to dry holes ran unusually high, there having been only four failures, one an unsuccessful gas test, compared with 19 oil wells and a small gas completion. Except for two wells in Clare County and another in Isabella County, the new production was wholly in southwestern Michigan, Kent and Ottawa developments comprising the total. The first completion in several weeks in Van Buren County was reported.

A 450-bbl. well in the Tallmadge district of Ottawa County was the week's best while the five new oil wells in Kent County were marked by a falling off in productivity, as compared with completions of a few months ago.

Three of the four Overisel producers are in Section 34, the other in Section 27 while the Monterey Township completion recorded by Hugh H. Heinig in Section 17 was good for 100 bbl. a day, after an acid treatment. The Jacob Bolema, Sprenger Brothers, Gould & Cross and Charles W. Cook tests were finished in Overisel. Three small producers were completed in Kent's Walker Township, two others in the Wyoming Township sector, while the new Tallmadge producers were concentrated in Sections 24 and 25, Century Oil & Gas Co.'s No. 1 Riordan being the best, good for 450 bbl. a day. The Van Buren completion was Reed, Whitney & Whitney's No. 3 Cooley in Section 14 of Columbia Township.

Crown Development Co. completed a gas well in Section 7 of Ottawa's Wright Township, which produced 304,000 cu. ft. a day.

There was little activity in Central Michigan. American Drilling Co. did fairly well with the ninth of its Ida Newcomer wells, in Section 32, Redding Township, Clare County, good for 435 bbl. a day naturally. A Sun Oil Co. Monroe failure in Section 11 of Redding was plugged back to the Michigan stray and developed into a small producer. Meanwhile, a Sun test in Grant Township of Gladwin County was abandoned at 3,916 ft. and Gulf Refining Co. completed a Wise Township well for 40 bbl. a day.

Oil and gas drilling permits for the year increased to 167 as the state Conservation Department approved plans for wells at 15 locations, 6 in Allegan County, 2 each in Monroe, Van Buren and Ottawa, 1 in Kent, and another in Isabella County.

Following is the weekly completions summary:

Allegan County

Monterey Township (3n-13w)—After an acid treatment, production of 100 bbl. a day was obtained from Hugh H. Heinig's No. 1 Fred Miller, C S½ NE NE Section 17, total depth 1,667 ft.

Overisel Township (4n-14w)—Jacob Bolema's No. 3 Vander Poppen, SE NE SW Section 27, completed at 1,477 ft. produced naturally at the initial rate of 200 bbl. a day. In Section 34 Sprenger Brothers' No. 1 Graveling, SW NE SE, completed at a depth of 1,524 ft., was good for 240 bbl. a day after it was treated with acid. Gould & Cross' No. 1 George Rigterink, SW NE SW, had an initial production of 400 bbl. a day after acidizing, total depth 1,438 ft., and Charles W. Cook's No. 2 Hazekamp, SE SW NW, completed at 1,474 ft., was producing 264 bbl. a day, naturally.

Arenac County

Clayton Township (20n-4e)—Don Rayburn's No. 1 G. Bishop, NW NW SW Section 14, a test for gas, was abandoned at 1,306 ft.

Clare County

Redding Township (19n-6w)—American Drilling Co.'s No. 9 Ida B. Newcomer, C N½ NW NE Section 32, had an initial production of 435 bbl. a day, naturally, completion depth being 3,874 ft. Sun Oil Co.'s No. 4-1 State-Redding, C S½ SW NW Section 11, was pumping 2 bbl. a day. The test was dry in the Monroe formation at 3,926 ft. and was plugged back to an oil show in the Michigan stray sand, where the small production was obtained after a shot of nitroglycerin.

Gladwin County

Grant Township (18n-2w)—Sun Oil Co.'s No. 1 Clare C. Tubbs, C W½ NW SW Section 2, was dry and abandoned at 2,916 ft.

Isabella County

Wise Township (16n-3w)—Gulf Refining Co. production division completed No. 2 Albert Reed, SW SW NW Section 16, at 3,711 ft. After acid treatment the well produced at the rate of 40 bbl. a day.

Kent County

Walker Township (7n-12w)—Best of three new Walker field wells was George Kernodle's No. 1 Goree, SW NW NW Section 31, completed at 1,864 ft., and producing 150 bbl. a day, after it was acidized. C. A. Welsh's No. 2 Ed Whalen, NE NE SW Section 32, was good for 85 bbl. a day from a depth of 1,905 ft., after acid treatment, and Welsh's No. 2 Marcellus & Terweir, NE SW NW Section 30, had an after-acid production of 20 bbl. a day, total depth 1,934 ft.

Wyoming Township (6n-12w)—Michigan Devonian Petroleum Co.'s No. 1 S. Jansma, C E½ E½ SW SE Section 14, was good for 50 bbl. a day, after an acid treatment at 1,918½ ft. W. R. Alexander, trustee's No. 1 Hop, SW SE SE Section 14, completed at 1,907 ft., produced 95 bbl. a day, after an acid treatment.

Monroe County

Dundee Township (6s-6e)—Vanco Oil & Gas Co.'s No. 2 Henry Mueller, NE SW NW Section 30, was dry and abandoned at 2,170 ft.

Ottawa County

Tallmadge Township (7n-13w)—Twin Drilling Co.'s No. B-7 Frank McKay, SW NW SW Section 24, rated 75 bbl. a day, after an acid treatment, total depth 1,897 ft. Columbia Oil & Gas Co.'s No. 1 George Doverman, SW SW NE Section 24, was completed dry at 1,975 ft. Smith Petroleum Co. and Welsh Oil Co.'s No. 2 Adema & May and others, NW SE NW Section 25, completed at 1,864 ft. and acid treated, was producing 250 bbl. a day. North American Drilling & Producing Co.'s No. 1 Lawrence & Kobel, W½ W½ W½ Section 25, was good for 70 bbl. a day from a depth of 1,880 ft., after acid treatment. Century Oil & Gas Co.'s No. 1 C. Riordan, NE NW NW Section 25, completed at 1,880 ft. and acidized had initial potential of 450 bbl. a day.

Wright Township (8n-13w)—Crown Development Co.'s No. 1 Stanley J. Williams, SE SE SE Section 7, was completed at 1,403 ft. as a gas well producing 304,000 cu. ft. a day.

Van Buren County

Columbia Township (1s-15w)—Reed, Whitney & Whitney's No. 3 Cooley and others, SW SE SE Section 14, completed at 1,177½ ft., was good for 50 bbl. a day, naturally.

Illinois Fields

(Continued from Page 84)

NE NW SE Section 35-2n-5w, deepening from 2,770 ft., moving in material to drill to St. Louis lime.

In Clinton County L. G. Muller's No. 1 William Schmidt, 900 ft. from west and 1,320 ft. from south lines of SE¼ Section 35-2n-5w, moving in standard tools.

In Jefferson County Magnolia Petroleum Co.'s No. 1 Lettie Jones, NE NE NE Section 10-3s-2e, location.

In Randolph County Fisher's No. 1 Utchman, SW cor. NE NW Section 7-6s-5w, to deepen from 1,650 ft. G. & L. Oil Co.'s No. 2 Schultz, 495 ft. from south and 990

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ft. from east lines of NW¼ Section 2-7s-6w, drilling below 205 ft.

In White County Kingwood Oil Co.'s No. 1 Martin, near C NW SW NE Section 13-7s-8e, rig.

In Saline County Oliver Drilling Co.'s No. 1 Wickwire, NE NE SW Section 15-10s-6e, rig.

In Jasper County Pure Oil Co.'s No. 1 Warren Consolidated, C E½ NE NW Section 33-6n-10e, moving in material.

In Marion County Texas Co.'s No. 1 R. N. Davis, NW NE NE Section 21-1n-2e, location.

In Wabash County Mayhen and others' No. 5 Hogan, 200 ft. from east and 400 ft. from north lines of SE NE Section 1-1n-12w, an old well deepening, drilling at 1,720 ft.

In Perry County Magnolia Petroleum Co.'s No. 1 Bruns, SE NW NW Section 15-4s-3w, location.

In Randolph County Travis and others' No. 1 Lauber, C NW SW Section 15-5s-7w, drilling at 150 ft.

In Franklin County C. D. Neff and others' No. 1 Downey, SW SW SW Section 26-7s-4e, pits.

In Gallatin County Colebeck's No. 1 Duffy, NE NW NW Section 25-8s-9e, a work-over, old total depth 3,007 ft., perforated with 24 shots at 2,785-95 ft., no showing of oil; acidized with 2,000 gal., and shot with 2p qt. at 2,803-11 ft., swabbed 500 bbl. of fluid, 25 per cent oil; estimated at 35 bbl. per day of oil and 300 bbl. of water; put on the pump.

Among the Active Outposts

In Cass County Cass Commercial Oil Co.'s No. 1 Maslin, NW SE SE Section 2-17n-10w, drilling at 725 ft.

In Macon County Eureka Oil Corp.'s No. 1 Rhodes, SW SW NW Section 28-17n-11w, drilling below 1,980 ft.

In Edgar County Burkitt's No. 1 Schoitker, C W½ NW SE Section 30-16n-11w, total depth 1,475 ft., reaming casing.

In Coles County East Oakland Syndicate's No. 1 Temple, SW cor. SE NE Section 36-14n-10e, total depth 2,290 ft., pulled tubing and cleaning out.

In Christian County A. Moore and others' No. 1 Meyers, SE SW SE Section 7-13n-1e, total depth 667 ft., fishing for bailer.

In Shelby County O. Baugher's No. 1 Anderson, NW cor. Section 36-12n-5e, drilling at 350 ft.

In Coles County Carter Oil Co.'s No. 1 Seaman, NW NE SW Section 35-12n-7e, total depth 2,059 ft., running Schlumberger test. Benoist sand was topped at 1,909 ft. and Aux Vases was estimated to have been topped at 1,966 ft. This test is being very closely watched and is being cored all the way down from 1,218 ft.

In Shelby County Seaboard Oil Co. and others' No. 1 Miller, SW SW SE Section 32-11n-2e, drilling below 200 ft.

In Fayette County John Pummill's No. 1 Isbell, NW NE SW Section 33-8n-1w, derrick.

In Jersey County A. W. Gerson's No. 1 Knight, SW cor. NE NW NW Section 32-7n-11w, drilling at 2,009 ft.

In Bond County Lee and others' No. 1 Shorf, Section 27-7n-4w, total depth 2,016 ft., plugged back to 1,435 ft. and re-treated with 1,000 gal. Will put on pump. Harr's No. 1 Thacker, C E½ NE Section 29-7n-4w, drilling below 950 ft. Henderson's No. 1 Hargood, NE NE SW Section 36-7n-4w, rigging up machine. Devonian Oil & Gas Co.'s No. 1 Ambuehl, NE SW NW Section 22-6n-4w, is shut down. It is estimated to have pumped 5 bbl. of oil and a large volume of water per day, total depth 1,930 ft., plugged back from 1,946 ft.

In Crawford County La Salle Drilling Co.'s No. 1 Berryhill, NE NE NW Section 9-6n-13w, drilling below 1,610 ft., had a showing of oil at 1,474-1,525 ft. Seger and others' No. 1 Steward, NE NE NE Section 27-6n-11w, total depth 2,398 ft., shut down for orders; Rosiclare lime topped at 1,574 ft.

In Lawrence County J. L. Williams' No. 1 Mark Smith, NW NW SW Section 29-5n-12w, pits dug. Dee Miller's No. 1 Stout, NW NE SW Section 30-5n-13w, rig up. Walter Payne's No. 1 Monjar, SW NE NW Section 28-4n-11w, drilling at 1,286 ft. with hole full of water.

In Madison County Jesse R. Wilson's No. 1 Danderman, SW SW SW Section 1-5n-6w, drilling below 445 ft. R. J. Jennings and others' No. 1 Wagner, SE SW NW Section 22-4n-5w, drilling below 210 ft.

In Monroe County Dorsey Oil Co.'s No. 1 Rose, NW cor. SW¼ Section 15-1s-10w, drilling at 450 ft. Hughes Petroleum Corp.'s No. 1, SW cor. NE NE SE Section 15-3s-11w, drilling at 1,050 ft.

In Wabash County Mode Bruce & Lacey's No. 1 Kenlitt, SE SW SE Section 19-1s-12w, coring at 2,105 ft.

In Edwards County Noah & Morrison's No. 1 Prudential Life, SE NE NE Section 24-2s-10e, moving in rotary. Wilson Drilling Co.'s No. 1 Curtis, C E½ NE SE Section 13-3s-10e, shut down at 1,584 ft., for repairs.

In Wayne County Steingle's No. 1 Hillaird Consolidated, C N½ NW SE Section 34-1s-7e, set 5½-in. casing at 3,252 ft.

In White County New Penn Development Co.'s No. 1 Elliott, SW NW NE Section 35-2s-8e, fishing for drill pipe, total depth 3,318 ft. New Penn's No. 1 Williams, SW cor. SE SE NW Section 28-3s-9e, show of gas and oil on drill-stem test at 3,385-3,427 ft. W. F. Fortner's No. 1 Calvin, NE NE SW Section 9-3s-14w, coring at 2,465 ft. Phillips' No. 1 Garr, C W½ NW NW Section 31-4s-11e, a Devonian test, drilling at 3,005 ft., with McClosky lime topped at 2,968 ft.

In Hamilton County Texas Co.'s No. 1 Provident Mutual, C N½ NW NW Section 21-3s-7e, shut down at 2,038 ft., to make repairs.

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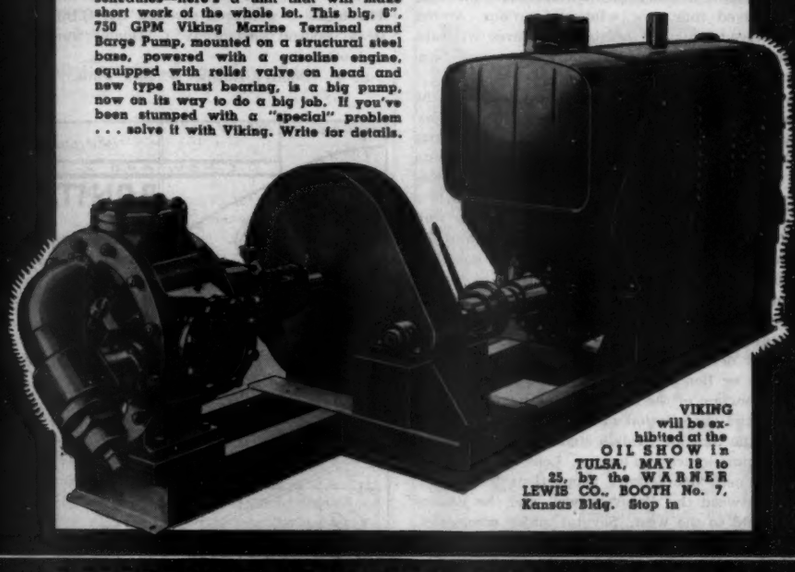

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North and East Texas

By
D. H. STORMONT

Record Is Made by Montague County Deep Discovery Well

WICHITA FALLS, Tex., Feb. 26.—Heading all other developments in the increasingly active North Texas district was the flow of 425 bbl. of oil in 3 hours or at the rate of 3,400 bbl. daily at Sinclair Prairie Oil Co.'s new field discovery in Montague County.

Adding to the district's activities were reports of some 10 new wildcat locations and intentions to drill. Clay County received four new wildcat locations, Archer County received tentative locations for three wildcats, two were staked in Montague County and a new location was made in Wise County.

The new deep field in Montague County indicated the largest discovery well ever completed in North Texas. The pool opener, Sinclair Prairie Oil Co.'s No. 1 Howard, W. Wallace Survey, ¾ mile west of the town of Bonita and 10 miles east of the Rogers & Rogers field, was officially gaged late in the week at 425 bbl. of oil in 3 hours. Flowing through open 7-in. casing, the well made 165 bbl. of oil the first hour and 125 bbl. and 135 respectively, the second and third hours. A gas flow of 2,700,000 cu. ft. was also gaged. Gravity of the oil rose from 39.7° to 41° at the end of the flow. Casing was cemented at 5,240 ft. The flow was natural and from pay drilled from 5,241 to 5,249 ft. Geologists had not definitely determined whether the pay section was basal Strawn or Bend.

That this portion of the county is due for a thorough and widespread exploitation of its deeper horizons as a result of the Sinclair Prairie strike is evidenced by the sudden spurt in acreage buying. Leasing and blocking has assumed "boom time" proportions for the 10-mile strip between the discovery well and the Rogers & Rogers field to the west. Several major companies, as well as numerous independents, already hold drilling blocks in the area.

Two new wildcat tests were reported in Montague County during the week, one a 5,200-ft. Caddo-lime test and the other a 2,000-ft. test. The new deep wildcat was staked by Ramsey Petroleum Corp. as its No. 1 W. H. Magee, just outside of the town of Montague in the central part of the county. Location is 500 ft. south and 330 ft. west of the southwest corner of the J. Hodges Survey, but in the A. C. Davis Survey, Abstract 302. Drilling contract has been set and rigging up will start immediately. A new shallow test has been staked in the northeastern part of the county by Gibson & Jennings as their No. 1 J. G. Howard, 830 ft. from the north and 660 ft. from the east lines of the S½ Block 90, Kaufman C.S.L. Survey, 9 miles northeast of Nocona.

Archer County

A 4,700-ft. Caddo-lime wildcat test will be given Archer County by Hedrick Oil Co.'s No. 1 L. W. McCrory, 2½ miles southeast of the discovery well in the South Mankins field. It is 330 ft. from the south and west lines of Section 2, Block 94, A.T.N.C.L. Survey. Contract has been let and drilling is scheduled to start immediately.

Southeast of the town of Mankins several deals are being worked out for deep tests. One of the proposed locations is by Oil Incomes, Inc., and is in Section 20, A.T.N.C.L. Survey and another is by G. W. Cooper and in the W. G. Pillow Survey.

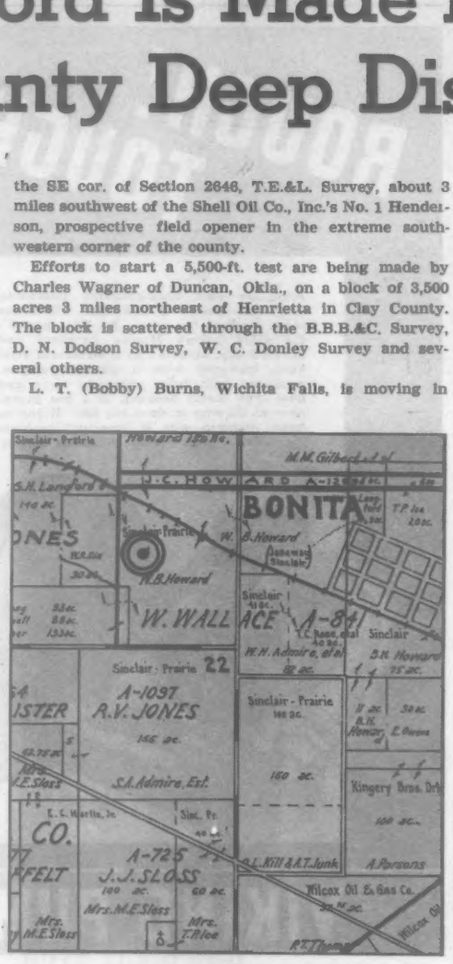
Clay County

Continued exploration of Clay County's deeper horizons was seen during the week with reports of four new wildcats. Staley Oil Co. is preparing to resume work at its No. 1 J. D. Percifield, projected 5,000-ft. wildcat in Section 37, T. J. Belcher subdivision, 6 miles southeast of Halsell. The well was spudded last year and has since remained idle.

S. D. Jackson of Wichita Falls has staked tentative location on his block in southwest Clay County, and is preparing to drill in the near future. The location is in the SE cor. of Section 2646, T.E.&L. Survey, about 3 miles southwest of the Shell Oil Co., Inc.'s No. 1 Henderson, prospective field opener in the extreme southwestern corner of the county.

Efforts to start a 5,500-ft. test are being made by Charles Wagner of Duncan, Okla., on a block of 3,500 acres 3 miles northeast of Henrietta in Clay County. The block is scattered through the B.B.B.&C. Survey, D. N. Dodson Survey, W. C. Donley Survey and several others.

L. T. (Bobby) Burns, Wichita Falls, is moving in



Heydrick Map Co., Wichita Falls

Immediately west of Bonita is Sinclair Prairie Oil Co.'s No. 1 Howard, new field discovery for Montague County, indicating a daily potential of 3,400 bbl. of oil

derrick for No. 1 Mullens, SE cor. N½ Block 2617, about ½ mile northwest of the discovery well by Shell Oil Co., Inc., on the Henderson tract in the southwest corner of the county.

Wise County

Northwestern Wise County is reported scheduled for a 4,500-ft. wildcat and possibly another 5,000-ft. Ellenburger-lime test. The 4,500-ft. wildcat is part of a deal whereby L. E. Hults of Fort Worth took over the old W. F. Holifield block 3 miles east of Bridgeport.

Just west of Park Springs Jack Caudle has assembled a large block out of the Turner, Gregory, Clements and other surveys and plans a 5,000-ft. Ellenburger wildcat test during the spring months.

NORTH TEXAS COMPLETIONS

Archer County

Chapman & McFarlin's No. 4 L. F. Wilson B, 3,857-73 ft., 544 bbl. Chapman & McFarlin's No. 3 L. F. Wilson D, 4,257-4,307 ft., 600 bbl. Cochran & Cain's No. 3 S. B. Herron, 860-65 ft., 15 bbl. Deep Oil Development Co.'s No. 2 Ray Carson, 4,314-43 ft., 720 bbl. Dillard White & Duncan's No. 2 A. P. Nichols, 4,317-87 ft., 661 bbl. Helmerich & Payne, Inc.'s No. 4 J. N. Shephard, 4,290-99 ft., 1,200 bbl. Helmerich & Payne, Inc., and others' No. 3 Finley, abandoned location. W. T. Hutcheson, Jr.'s No. 1 Claude Deskin, 1,202 ft., dry. King Oil Co.'s No. 11 M. E. Rogers A, 1,267-85 ft., 8 bbl. King Oil Co.'s No. 12 M. E. Rogers A, 1,268-87 ft., 9 bbl. Petroleum Production Co.'s No. 2 O. T. Anderson, abandoned location. Phillips Petroleum Co.'s No. 3 Dr. J. A. Little, 4,345-93 ft., 1,049 bbl. Phillips Petroleum Co.'s No. 4 Dr. J. A. Little, 4,308-88 ft., 902 bbl. H. A. Schaeffer Oil Co.'s No. 3-A W. P. Ferguson, 3,782-3,869 ft., 492 bbl. L. Sikes' No. 7 O. T. Anderson, 4,003-18 ft., 640 bbl. L. Sikes' Nos. 1-S, 3-S, 4-S, 5-S O. T. Anderson B, abandoned locations. Southern Petroleum Exploration, Inc.'s Nos. 7 and 8 S. D. Johnson, abandoned locations. White & Duncan's No. 17 C. Webb, 682-708 ft., 5 bbl.

Baylor County

Hall-Jordan's No. 1 D. E. Blackman, 5,522 ft., dry.

Clay County

Texas Co.'s No. 4 W. F. George, 237 ft., dry.

Cooke County

Big Indian Oil & Development Co.'s No. T. McFadden, 2,111 ft., dry. Bridwell Oil Co.'s No. 2 Joe Fisher, 1,416 ft., dry. Seitz and others' No. 1 J. Luke, 963-80 ft., 6 bbl. Texas Co.'s No. 1 N. Plott B, 685-734 ft., 10 bbl.

Montague County

Lesh & McCall's No. 1 O. V. Beck, 4,318-43 ft., 568 bbl.

Wichita County

Bert L. Ligon and others' No. 2 C. F. Collins, 5,085 ft., dry. Palmer & Chenault's No. 14 S. H. McCarty, 3,816-99 ft., 250 bbl. Price, McDonald & Atwood's No. 1 Ed Foster, 1,912 ft., dry. Ross Drilling Co. and King's No. 2 J. L. and T. J. Waggoner, 3,825-99 ft., 355 bbl. Scarbrough & Turner's No. 1 C. Roberts, 1,410 ft., dry. Tide Water and Perkins Cullum's No. 10 W. P. Ferguson, 3,710-3,840 ft., 440 bbl. Tide Water and Perkins Cullum's No. 17 W. P. Ferguson, 3,733-3,850 ft., 560 bbl. Tide Water and Perkins Cullum's No. 13 Charles Pettit, 3,702-3,808 ft., 640 bbl. Mrs. Hulda B. Wallace's No. 2-D J. C. Straus, 3,714-3,818 ft., 560 bbl.

Wilbarger County

Consolidated Oil Co.'s No. 7 W. T. Waggoner CC, 3,741-61 ft., 352 bbl. Consolidated Oil Co.'s No. 1 W. T. Waggoner estate FF, 4,520 ft., dry. Pois & Schulz's No. 3 B. D. Flaniken, 1,892-1,918 ft., 250 bbl. W. H. Rogers' No. 1 A. P. Morris, 2,890 ft., dry. J. A. Woods' No. 2 Mrs. M. L. Womack, abandoned location.

Young County

L. A. Long's No. 3 R. M. Williams E, abandoned location. Taubert & McKee's No. 1 H. C. Shanafelt, 4,459-94 ft., 100 bbl. Tex-Tor Oil Co. and others' No. 2 L. Moseley, 3,786-3,831 ft., 759 bbl. Travis Oil Corp.'s No. 2 Mrs. D. F. Ford, 2,735-2,791 ft., 488 bbl. Trentman, Hunnellee & Rankin's No. 6 J. K. Quinn, 2,722-75 ft., 350 bbl.

EASTERN TEXAS

DALLAS, Tex., Feb. 26.—Smith County's Chapel Hill district continued to hold the attention in eastern Texas for another week. After officially gaging the Shell Oil Co., Inc.'s No. 1 Campbell, discovery oil well in the district, some 2 weeks ago for an initial flow of 225 bbl. of oil daily, naturally, the operators elected to acidize the pay section during the past week and as a result increased the production to 662 bbl. a day.

The No. 1 Campbell, P. Lively Survey, opened the first major oil production from the Trinity series in the East Texas district when it found saturation in the Pettit zone from 8,036 to 8,068 ft. The lime pay

was acidized after considerable engineering data had been studied regarding the results of acidizing Pettit-lime wells in Louisiana. Despite the comparatively deep producing section at the Chapel Hill field, an intense lease and royalty play has developed during the past week. Many of the larger independent operating companies are acquiring acreage close to the discovery. Indicating an immediate drilling campaign, Sun Oil Co. which is drilling a south outpost to the field at the present time, has made several tentative locations and plans to definitely announce the drill-sites this week. Work will start immediately at the locations.

A pipe-line outlet for oil produced in the field is not yet in sight, as Shell announced it would use trucks to haul its crude to its East Texas station at Kilgore. Hunt Oil Co. has a line from its well handling the distillate output and also has a gas line to the East Texas field.

Meanwhile Sun Oil Co. continues to drill ahead toward the Pettit lime in No. 1 Huddle, south outpost for the Chapel Hill field. It is located in the Dickenson Survey and was last reported below 7,744 ft.

Houston County's deep wildcat test being drilled by Shell Oil Co., Inc., on the Dorsey tract, M. Sallas Survey, on the south flank of the Percilla structure in the northern part of the county, continues to make hole below 10,000 ft. The company is reported to have set its contract depth at 10,900 ft. It was last reported below 10,584 ft. in shale. This is the deepest test ever drilled in the eastern Texas area.

Wild Well in Anderson

Considerable excitement was created in Anderson County early last week when a wildcat being drilled by R. H. Williamson on the O. G. Rogers tract, William Greenwood Survey, 6 miles southeast of Elkhart, blew in as a wild gas well. The well unexpectedly kicked out of control after having been shut in for several weeks in the Woodbine sand. It blew wild for several days making an estimated 13,000,000 cu. ft. of gas daily. There was 350 ft. of surface casing in the hole to limit the chances for cratering, but after the crew was unable to kill the flow, arrangements were made with a professional wild-well fighter to cope with the large flow. According to last reports the well was being successfully capped.

The gas well is located about ¾ mile south of the H. L. Parsons' No. 1 Hemby, discovery gas and distillate well in the area and completed about 2 years ago. It was completed at a depth of 5,421 ft. for 45,000,000 cu. ft. of gas and 35 bbl. of distillate daily.

Immediate development of the gas field is expected, one location having already been made. J. O. Hart & Sons, Fort Worth, announced location for a test about 4,000 ft. southwest of the new gas well. It will be in the S. C. Box Survey.

EAST TEXAS FIELD COMPLETIONS
(1-hour gages)

Gregg County—Longview Area

B. F. Phillips' No. 4 Bumpas, 3,517-30 ft., 60 bbl.

Gregg County—Kilgore Area

American Liberty Oil Co.'s No. 7 Sabine River, 3,442-56 ft., 72 bbl. Lone Star Gas Co.'s No. 5 W. C. Griffin, 3,540-62 ft., 40 bbl. Ed Pace's No. 5 Trip Elder, 3,546 55 ft., 40 bbl.

Rusk County—Joiner Area

Placid Oil Co.'s No. 14-B S. Hale, 3,643-96 ft., 7 bbl.

Smith County—Joiner Area

Magnolia Petroleum Co.'s No. 43 J. R. Wright, total depth 3,893 ft., to be used for salt-water disposal well.

Upshur County—Longview Area

Circle Oil Corp.'s No. 2 J. T. Jones, 3,760-65 ft., 12 bbl.

EAST CENTRAL TEXAS COMPLETIONS
(24-hour gages)

Anderson County

In the Long Lake field Stroube-Stroube's No. 3 Monnig, S. Sanches Survey, 5,258-62 ft., 138 bbl. Tide Water Associated Oil Co.-Seaboard Oil Corp.'s No. 1 Washington Rose, S. Sanches Survey, 5,181-5,203 ft., 115,000,000 cu. ft. of gas.

Henderson County

In the Flag Lake field Harry Hines' No. 1 Dillard, H. Jeffries Survey, 2,998-3,016 ft., 55 bbl.

Houston County

In the Grapeland field American Liberty Oil Co.'s No. 1 Collins, J. Herrod Survey, 5,939-80 ft., 80,000,000 cu. ft. of gas. American Liberty Oil Co.'s No. 1 Jane Hicks, J. D. J. Procilla Survey, 5,981-6,019 ft., 60,000,000 cu. ft. of gas. In the Navarro Crossing field Humble Oil & Refining Co.'s No. 2 Pyron heirs, J. L. Riviere Survey, 5,880-82 ft., 63 bbl.

Leon County

In the Long Lake field Carter-Gragg Oil Co.'s No. 2 Standard Oil of Kansas, S. Sanches Survey, 5,255-56½ ft., 59 bbl.

West Texas Fields

(Continued from Page 89)

20 per cent water. Iron Mountain Oil Co.'s No. 3 Coker, Section 159, B.B.B.&C. Survey, dry and abandoned at 3,244 ft.

Stephens County

In the Stribling field Grace & Woods' No. 1 Beaty, W. Bales Survey, 3,610-58 ft., 12 bbl. daily, pumping.

Taylor County

In the Bowles field S. B. Roberts' No. 2 Bowles, Section 28, B.A.L. Survey, 1,739-45 ft., 91 bbl.

PANHANDLE COMPLETIONS
(24-hour gages)

Carson County

Texas Co.'s No. 18 Boney, 3,089-3,150 ft., 506 bbl.

Gray County

Amagray Oil Co.'s No. 2 Cobb B, abandoned as dry at 2,819 ft. Cities Service Oil Co.'s No. 3 Wall B, 3,201-53 ft., 338 bbl. Gulf Oil Corp.'s No. 2 Merten, 3,190-3,305 ft., 165 bbl. King Oil Co.'s No. 6 Baer B, 3,247-80 ft., 321 bbl. Magnolia Petroleum Co.'s No. 16 Haggard, 3,280-95 ft., 278 bbl.

Hutchinson County

J. E. Crosbie, Inc.'s No. 31 Pitts, 2,810-2,925 ft., 524 bbl. Dolomite Production Co.'s No. 6 Perkins, 2,960-3,063 ft., 317 bbl. Gulf Oil Corp.'s No. 94 Dial, 2,950-3,005 ft., 325 bbl. Phillips Petroleum Co.'s No. 1 Ada May, 2,985-3,217 ft., 69,000,000 cu. ft. of gas. Texas Co.'s No. 18 Pond, 3,030-90 ft., 651 bbl.

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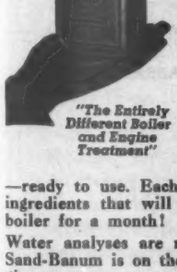

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North Louisiana, Arkansas

By
GEORGE WEBER

Deep Failures in Two States; New Deep Test in Arkansas

SHREVEPORT, La., Feb. 26.—Failure of two more deep wells in North Louisiana and Arkansas and a gas blowout in the Sligo field of Bossier Parish marked the week's results of drilling in the tristate area. A second deep Smackover-lime wildcat in South Arkansas was announced this week, and operations in the Atlanta field will be of interest during the next several days.

Arkansas Wildcat

James Forgetson staked location for No. 1 L. M. Dendy, C SW SW Section 24-17-19, southeast of the Village pool in Columbia County. This Smackover-lime test has been scheduled for several weeks on a block which Forgetson took over from [illegible] Associated Oil Co. The wildcat is expected to begin drilling within the next few days.

Standard Oil Co. of Louisiana's No. 1 Sturgis, a deep wildcat in Miller County, is scheduled to get under way soon. Derrick is up and the company is building road.

The last current Smackover-lime wildcat, Texas Canadian Oil Corp. and others' No. 1 J. M. Stocks, a deepening job in the Falcon area of Nevada County, is being abandoned. The test is bottomed at 6,068 ft., having shown salt water with a sulfur odor and slight oil stains in the oolitic member of the upper Smackover at 5,993-6,068 ft.

Among the active drilling fields of South Arkansas, Atlanta is the most interesting at present, with several tests beginning between the J. K. Mahoney extension and the field proper. As shown in the accompanying map, offsets to the east, south, southwest and west of the extension discovery are staked, two of which are getting under way, and a third due for spudding soon. The east offset, J. K. Mahoney's No. 2 Emma Riley, is below 7,520 ft. and is due to encounter the Smackover within the next few days.

Interest in these tests is heightened by the fact that the Mahoney well had the Smackover and the porous section higher than wells in the field to the west, and the water level was also encountered higher, leading geologists to believe that possibly a saddle exists between it and the field proper. Current tests may shed more light on this possibility, although it is possible they will only indicate the saddle, as they are offsets to the extension well, and the main section of the field.

North Louisiana

With drilling considerably off from previous activity, North Louisiana interest is centered in three deep wildcats, and a gas blowout in Sligo. Bienville Parish's current wildcat test, Harry Hanbury's No. 1 Holston, a farmout from Standard Oil Co. of Louisiana, was coring red shale below 7,047 ft. at latest report. In La Salle Parish, Hunt Oil Co. and Arkansas Fuel Oil Co.'s No. 1 Goodpine Lumber Co. is drilling below 7,562 ft.

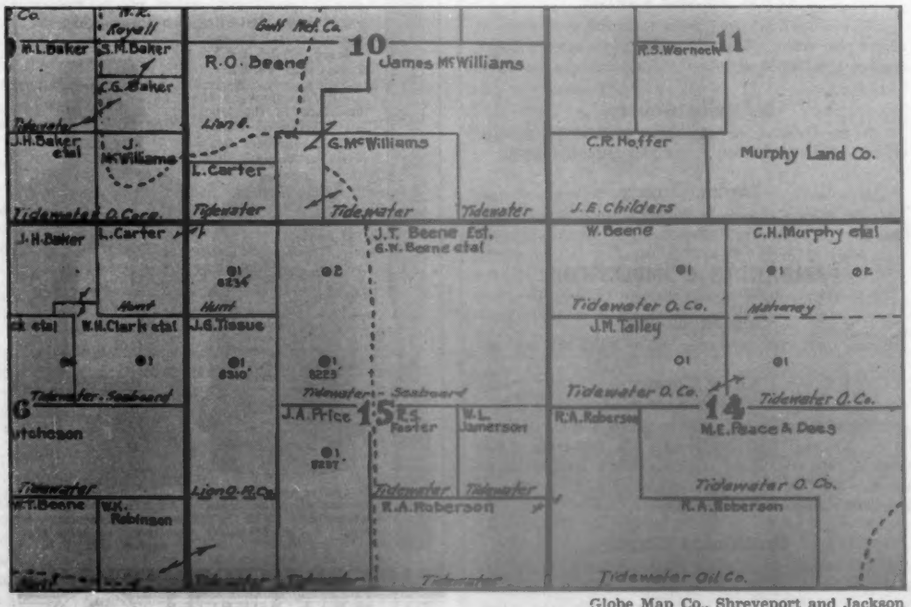
The deep Elm Grove test in Bossier Parish, Gulf Refining Co.'s No. 20 Hodges, plugged back from total depth of 8,647 ft., after encountering no shows in the lower Marine, and has perforated the chalk horizon at 1,550-62 ft., where a test will be made.

In the Sligo field of Bossier Parish, Union Producing Co.'s No. 1-B Thigpen-Herold topped the Pettit lime at 4,948 ft., and set a string of 5½-in. casing at 5,170 ft. With total depth at 5,210 ft. the well began blowing gas and water, believed to come from between two strings of casing set in the hole. Operators are attempting to determine where the gas is coming from.

The Caddo field, which has seen continued drilling over the past several years, is particularly active at the present time with 25 shallow operations under way.

East Texas Border

One heavy drilling rig is active in the Jefferson extension of Rodessa in Marion County, Texas, while several shallow operations are under way in the Caddo and Smithland sectors of the same county. During the past week one Smithland well was completed, and two wildcats were abandoned. The wildcats, Dr. Blackshear's No. 2 Mosely, located 7 miles southeast of Jefferson, was abandoned in the Tokio sand at 2,524 ft. after swabbing dry and the John Wrather's No. 1 Torrens, located 4 miles southeast of Smithland was dry at 2,446 ft. after perforations at 1,380-1,854 ft. and 1,057-60 ft. failed to show production.



Globe Map Co., Shreveport and Jackson

Interesting drilling operations are getting under way in the Atlanta field of Columbia County, Arkansas. Offsets to the eastward extension and the test on the east edge of the main section of the field will show important geologic data on the structure between the field proper and the extension

NORTH LOUISIANA COMPLETIONS

Caddo—Caddo Parish

Lee Miller's No. 1 Crystal fee, Section 13-21-16, pumping 15 bbl., total depth 2,288 ft. J. S. Pate's No. 1 Stinson and others, Section 6-20-15, initial production 150 bbl., acidized with 4,000 gal., total depth 1,507 ft. R. W. Williams' No. 1 P. Hobbs, Section 21-21-15, dry and abandoned, total depth 1,770 ft.

Wildcat—Sabine Parish

John Derryberry and others' No. 1 Manton, C NE NW SW Section 34-7-13, dry and abandoned, total depth 3,009 ft. B. F. Phillips' No. 1 Blankenship, 330 ft. south and 202 ft. west of NE cor. SE NW Section 13-9-12, dry and abandoned, total depth 3,685 ft.

Cotton Valley—Webster Parish

Hunt Oil Co.'s No. 1 Grant Lumber Co., 660 ft. north and 1,880 ft. east of SW cor. Section 12-21-10, dry and abandoned, total depth 5,925 ft., no Holloway sand.

Production by Pool

Estimated daily gross production of all companies in the week ended February 24:

NORTH LOUISIANA

	Barrels
Bellevue	465
Caddo light	5,145
Caddo heavy	2,180
Converse	500
Cotton Valley	*14,520
Cross Lake	5,640
De Soto and Red River	945
Elm Grove	260
Haynesville	2,650
Holly	75
Homer	2,670
Lisbon	5,345
Pleasant Hill	90
Rodessa	20,845
Sarepta-Carterville	†310
Sligo	1,630
Sugar Creek	225
Urania	2,475
Zwolle	1,870
Total	67,940

SOUTH ARKANSAS

Atlanta	810
Big Creek	45
Buckner	2,590
Champagnolle	1,330
Dorcheat	1,065
El Dorado	1,715
Lewisville	700
Lisbon	225
Magnolia	19,430
Miller County	235
Nevada	545
Rodessa	2,025
Schuler	18,595
Smackover light	1,805
Smackover heavy	14,000
Stephens	525
Troy	1,295
Urbana	940
Village	1,395
Total	69,270
Texas side of Rodessa	23,320 bbl.

*3,510 bbl. is distillate.
†100 bbl. is distillate.

ARKANSAS COMPLETIONS

Magnolia—Columbia County

Southwood Oil Co.'s No. 1 Couch, 990 ft. north and 1,320 ft. east of SW cor. Section 23-17-20, initial production 360 bbl., 12/64-in. choke, tubing pressure 1,200 lb., casing pressure 1,400 lb., total depth 7,643 ft. Southwood Oil Co.'s No. 1 A. L. Poindexter, 100 ft. north of C SE SE Section 23-17-20, initial production 625 bbl. through 12/64-in. choke, tubing pressure 1,250 lb., cas-

ing pressure 1,250 lb., total depth 7,644 ft. Standard Oil Co. of Louisiana's No. 1-B Longino, C NW SE Section 19-17-19, initial production 315 bbl. through 12/64-in. choke, tubing pressure 975 lb., casing pressure 1,000 lb.

Troy—Nevada County

Berry Asphalt Co.'s No. 5 C. C. Fincher, NW cor. NE SE Section 10-14-20, pumping 30 bbl., total depth 1,246 ft.

Wildcat—Nevada County

Texas Canadian Oil Corp. and others' No. 1 J. M. Stocks, 300 ft. south and 380 ft. west of NE cor. SW SE Section 9-15-22, old well drilled deeper from 3,654 ft., total depth 6,068 ft., dry and abandoned.

EAST TEXAS BORDER COMPLETIONS

Smithland—Marion County

A. F. Anding's No. 1 Duke Hart, M. G. Nall Survey, pumping 5 bbl. a day, total depth 2,402 ft., set 5-in. casing 2,212 ft.

Wildcat—Marion County

Dr. Blackshear's No. 2 Moseley, D. Lane Survey, total depth 2,792 ft., dry and abandoned. John Wrather's No. 1 Torrens, T. J. White Survey, total depth 2,446 ft., dry and abandoned.

Gulf Coast Fields

(Continued from Page 101)

salt water with no trace of oil or gas. This well was drilled to a total depth of 10,536 ft., and several showings of gas and distillate, logged in the Wilcox at intervals from 9,500 to 10,200 ft., were tested but showed only a small amount of gas, distillate and salt water.

In the Rosenberg field, Fort Bend County, Humble Oil & Refining Co. was preparing to test No. 1 Miller, an outpost, northwest of production. The hole is bottomed at 8,499 ft., and 7-in. casing was cemented at 8,327 ft. Casing was cemented the previous week after the well attempted to blow out from a new sand at 8,491-99 ft. Sidewall cores at intervals from 8,255-63 ft. recovered sand and shale with an odor of gas.

In the Martha field, Liberty County, Stanolind Oil & Gas Co. apparently extended production 1,000 ft. southeast as casing was cemented preparatory to testing No. 1 Ross. The hole is bottomed at 8,164 ft., with 5½-in. casing cemented at 8,160 ft. An electrical survey showed an oil and gas sand at 8,093-8,101 ft., and salt-water sand at 8,136-46 ft.

McDannald Oil Co. extended the Magnet field, Wharton County, ¼ mile east with the completion of No. 1 Shotwell which flowed 77 bbl. per day through a ¼-in. choke from perforated casing at 5,550-56 ft. Approximately 1 mile south of the Hilje field, Sam Harrison and others' No. 1 Carlson is shut down after a drill-stem test at 5,297-5,317 ft. recovered 180 ft. of drilling mud, 1,170 ft. of salt water and 90 ft of drilling mud with a good oil and gas odor. Soft sand with an oil odor was logged in cores at intervals from 5,297-5,309 ft.

Production in the north extension area of the South China field, Jefferson County, was defined as Titanic Oil Co. abandoned No. 1 Dornbos at a total depth of 8,012 ft. Salt-water sand was cored at 7,570-7,610 ft. Location is in the H.T.&B. Survey No. 3, about 3 500 ft. north of production.

In Galveston Bay Standard Oil Co. of Texas staked location for No. 61-54 State, about 12 miles southwest of Anahuac in Chambers County. Contract depth is 8,500 ft.

TEXAS GULF COAST COMPLETIONS IN PROVED FIELDS

Chambers County

Anahuac field: Humble Oil & Refining Co.'s No. 17 Gripon, sand 7,040-93 ft., 660 bbl., ¼-in. choke. Barbers Hill field: Texas Gulf Producing Co.'s No. 9 Wilburn, sand 3,947-99 ft., 242 bbl., ¼-in. choke.

Fort Bend County

Thompson field: H. M. Naylor's No. 1 Mulvihill, 8,182 ft., dry and abandoned. Quintana Petroleum Co.'s No. 4-B Wolters, sand 5,419-45 ft., 346 bbl., ¼-in. choke.

Galveston County

Dickinson field: Midstates Oil Corp.'s No. 3 Holmes, perforated casing 8,735-40 ft., 336 bbl., ¼-in. choke.

Harris County

Clear Lake field: Humble Oil & Refining Co.'s No. 7 Hutchinson, 5,845 ft., gas well. Humble Oil & Refining Co.'s No. 31-West, sand 5,769-5,904 ft., 130 bbl., ⅛-in. choke. Fairbanks field: Amerada Petroleum Corp.'s No. 18 Foley, 6,850 ft., 144 bbl., ⅛-in. choke. Friendswood field: Humble Oil & Refining Co.'s No. 22 Beamer, sand 5,952-6,045 ft., 454 bbl., ¼-in. choke. Humble Oil & Refining Co.'s No. 37 Beamer, sand 5,656-6,042 ft., 528 bbl., ¼-in. choke.

Jefferson County

Lovells Lake field: Shell Oil Co., Inc.'s No. 1 Nelson, 7,807 ft., 181 bbl., ⅛-in. choke. South China field: Titanic Oil Co.'s No. 1 Dornbos, 8,012 ft., dry and abandoned.

Liberty County

Hardin field: Humble Oil & Refining Co.'s No. 15-A Partlow, 7,165 ft., 458 bbl., ¼-in. choke.

Jackson County

West Ranch field: Humble Oil & Refining Co.'s No. 6 Toney, sand 5,505-30 ft., 447 bbl., ¼-in. choke. Magnolia Petroleum Co.'s No. 44-A West, perforated casing 5,125-29 ft., 422 bbl., ¼-in. choke. Humble Oil & Refining Co.'s No. 7 Toney, sand 5,510-60 ft., 450 bbl., ¼-in. choke.

Matagorda County

Van Vleck field: Skelly Oil Co.'s No. 6 Moore estate, perforated casing 8,492½-95 ft., 115 bbl., 7/64-in. choke.

Tyler County

Spurger field: Republic Production Co.'s No. 32 fee, perforated casing 7,612-18 ft. and 7,621-31 ft., 179 bbl., ¼-in. choke.

Wharton County

Magnet field: Humble Oil & Refining Co.'s No. 1 Cockburn Oil Corp., sand 5,517-40 ft., 107 bbl., ¼-in. choke. McDannald Oil Co.'s No. 1 Shotwell, perforated casing 5,550-56 ft., 77 bbl., ⅛-in. choke. Withers field: Texas Co.'s No. 17-A Thompson, 5,545 ft., 49 bbl., ⅛-in. choke.

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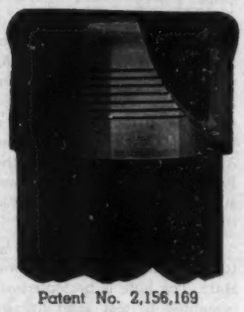

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Southwest Texas District

Wade City Distillate Pool Gets First Oil Production

By

F. L. SINGLETON

CORPUS CHRISTI, Tex., Feb. 26.—Opening the first crude-oil production in the Wade City field, Jim Wells County, and testing of a wildcat in San Patricio County, featured developments in Southwest Texas in the past week.

Rodney DeLange opened the first crude production in the Wade City distillate field, Jim Wells County, with the completion of No. 1-A McNeil, which flowed 190 bbl. of pipe-line oil per day through a ¼-in. choke. Tubing pressure was 425 lb. and casing pressure 700 lb. This well showed evidence of production the previous week when a drill-stem test at 4,915-30 ft., recovered pipe-line oil. Five and one-half-inch casing was cemented on bottom at 4,930 ft., and the well was completed through perforations at 4,923-28 ft. The well is in the Benito Lopez de Jaen Survey, about 1,300 ft. southeast of the same operator's No. 1 McNeil, completed as a distillate producer in sand at 4,788-91 ft. The completion is expected to create an active drilling campaign, as the area is divided into many ownerships.

Interest in the county is centered on the Reese & Dunn's No. 1 Perez, a wildcat 2 miles northwest of Alice, which is bottomed at 5,510 ft. An electrical survey is reported to have shown favorable indications in sand at 3,343-52 ft., and sidewall cores of the section recovered sand with a good showing of oil. The well is on a farmed-out lease from Arkansas Fuel Oil Co. Approximately 5 miles northeast of Alice in the Los Presnos de Arriba grant, Henshaw Brothers and others staked location for a Frio-Vicksburg test on the Gaither lease.

In San Patricio County, 1½ miles northwest of the town of Odem, Fred Wood was preparing to test No. 1 Hart. The hole is bottomed at 7,411 ft., and casing was cemented to test sand at approximately 6,900 ft., at which depth the well tried to blow out. Several attempts to drill-stem test the section failed, due to mechanical trouble. Location is in the William G. Burgess Survey.

In the East White Point field, San Patricio County, several wells were in the process of completion. Houston Oil Co.'s No. 9 Baldwin cored gas sand at 4,920-29 ft.; oil and gas sand at 4,929-47 ft., and the well is coring ahead for the 5,600-ft. pay. Plymouth Oil Co.'s No. 1 Shary was running casing after coring oil sand at 5,680-83 ft., total depth. Republic Natural Gas Co.'s No. 27 Rachal cored oil sand at 5,518-50 ft., and 5½-in. casing was cemented at 5,636 ft. Total depth is 5,640 ft. Sinclair Prairie Oil Co. apparently defined production from the 5,600-ft. sand in the south-extension area, as No. 6 State in Nueces Bay, cored salt-water sand at 5,650-60 ft., and 5½-in. casing was cemented at 4,380 ft., preparatory to completing as a gas well.

Development of the newly opened Fagan field, Victoria County, is expected to be started as Barnsdall Oil Co. and Transwestern Oil Co. purchased from C. L. Norsworthy his interest in the discovery well and approximately 200 acres surrounding the well. The two companies each control a half interest in the well and adjoining acreage, and development of the field will be done by Barnsdall Oil Co.

Landreth Production Co.'s No. 1 Caballero, a wildcat 5 miles southeast of the Fitzsimmons field, Duval County, was abandoned at 5,550 ft., and the company is moving the rig 5 miles northwest of San Diego for No. 1-A C. M. Robinson, in Paul Henry Survey 116. In the Sejita field Standard Oil Co. of Texas' No. 1 Rodriguez, northwest of the discovery well, is coring below 6,765 ft., with no additional showings reported. A drill-stem test the previous week at 5,474-98 ft., showed a small amount of distillate and several hundred pounds of working pressure.

In Victoria County Renwar Oil Corp. was preparing to deepen No. 1 Bayer after a drill-stem test through perforated casing recovered salt water. The hole is bottomed at 6,485 ft., and 5½-in. casing was cemented on bottom after an electrical survey showed favorable indications. South of the Cologne gas field, Colton & Colton's No. 1 Buckholt was drilled to a total depth of 5,400 ft., and casing is expected to be cemented below 2,600 ft., after an electrical survey showed promise of production in the Catahoula formation. In the Victoria field, Sims & Stolley's No. 1 Vogt, recently abandoned at 2,713 ft., is reported to be rigging up, preparatory to deepening to the 3,000-ft. sand recently opened by William Harding's No. 1 Bass.

On the northwest edge of the Government Wells field, Duval County, Magnolia Petroleum Co. was attempting to open Yegua-sand production by testing No. 3 Hahl through perforated casing at 2,890-94 ft. The result was a showing of salt water. The company was preparing to squeeze off the perforation and retest. This well was drilled to a total depth of 3,968 ft., and 7-in. casing was cemented at 3,003 ft., after a drill-stem test at 2,890-95 ft. recovered several hundred feet of oil and 150 ft. of salt water.

The progress of six Tertiary Wilcox tests continued to be watched with interest. In Bee County, about 7 miles southeast of Beeville, Bunte Brothers' No. 1 Earnest cored sandy shale with a gas odor at 5,812-54 ft., and a protection string of 9⅝-in. casing was cemented below 6,000 ft., after the well attempted to blow out. The showing was apparently from the Cockfield formation. In the Pettus field Union Producing Co.'s No. 56 Ray is drilling in shale and sand below 6,500 ft., while Mills Bennett Production Co. and Anderson Prichard Oil Corp.'s No. 2 Robinson is drilling in sandy shale below 7,579 ft.

Along the Balcones fault-line district, A. J. Holli-field's No. 1 D. M. Day, the discovery well of a new pool, 2½ miles southeast of Luling in Guadalupe County, was placed on the pump, and is pumping an estimated 2½ to 5 bbl. of oil per hour. The well was drilled to a total depth of 2,837 ft., and was completed in the Austin chalk at a plugged-back depth of 2,415 ft.

In Frio County Holland Oil Co.'s No. 1 Witting, 3 miles north of Miguel, D. T. Price Survey 6, is scheduled to be abandoned at a total depth of 5,314 ft., after a drill-stem test in the Edwards lime at 5,297-5,314 ft. recovered 90 ft. of sulfur water with a fair show of oil.

SOUTHWEST TEXAS COMPLETIONS IN PROVEN FIELDS

Caldwell County

Larremore field: John Black's No. 1 Starcke, 3,360 ft., dry and abandoned.

Calhoun County

Heyser field: Falcon-Seaboard Oil Co.'s No. 3 Williams, perforated casing 5,472-88 ft., 97 bbl., ½-in. choke. Gulf Oil Corp.'s No. 30-B Traylor, sand 5,480-92 ft., 105 bbl., 3/32-in. choke.

Duval County

Cedro Hill field: Humble Oil & Refining Co.'s No. 2-F Duval County Ranch Co., 1,437 ft., 31 bbl., ¼-in. choke. Chiltipin field: Gray and Wolfe's No. 2 Graham, 5,177 ft., dry and abandoned. Driscoll field: Continental Oil Co.'s No. 45-A Driscoll, perforated casing 3,347-62 ft., 62 bbl., jetting. Hoffman field: Continental Oil Co.'s No. 12 Collings, 2,676 ft., 254 bbl., ½-in. choke. Longhorn field: Hiawatha Oil & Gas Co.'s No. 6 Denman, perforated casing 4,030-36 ft., 63 bbl., 5/32-in. choke. M. M. Miller & Sons' No. 19 fee, 4,085 ft., 92 bbl., jetting. Rancho Solo field: Reese and Dunn's No. 2 Peters, perforated casing 1,850-70 ft., 250 bbl., pumping. Andrus, Reed and others' No. 3 Peters, perforated casing 1,843-53½ ft., 40 bbl., pumping. Seven Sisters field: Harvey and Henderson's No. 2-B Drummond, perforated casing 1,233-44 ft., gas well. Tarancahuas field: Cox, Hamon and others' No. 2 Hoffman, sand 2,052-60 ft., 384 bbl., ⅝-in. choke. Cox, Hamon and others' No. 3 Hoffman, 2,031 ft., 115 bbl., ⅝-in. choke.

Jim Hogg County

Colorado field: C. Andrade's No. 1 Trevino, sand 3,049-61 ft., 125 bbl., ½-in. choke. C. Andrade's No. 3 Trevino, sand 2,992-3,011 ft., 170 bbl., ¼-in. choke. Colorado-Octane Co.'s No. 5-C Trevino, 3,088 ft., 40 bbl., ⅛-in. choke. Humble Oil & Refining Co.'s No. 9 Atwood, 3,086 ft., 88 bbl., pumping. Kelsey field: Humble Oil & Refining Co.'s No. 52 McGill, 5,114 ft., dry and abandoned.

Jim Wells County

Ben Bolt field: Cimaron Oil Co.'s No. 1-A Whatley, perforated casing 5,224-36 ft., 341 bbl., ½-in. choke. Bridwell Oil Co.'s No. 5 Beasley, perforated casing 5,212-18 ft., 218 bbl., ½-in. choke. Bridwell Oil Co.'s No. 5-A Hoffman, 5,235 ft., 248 bbl., ½-in. choke. Heyser and Heard's No. 1 Garcia, perforated casing 5,268-74 ft., 331 bbl., ½in. choke. Magnolia City field: V. J. Meyer and others' No. 1 Garcia, perforated casing 5,708-18½ ft.; 142 bbl., 1/48-in. choke. South Alice field: Shell Oil Co., Inc.'s No. 1 Huebner, 5,364 ft., dry and abandoned.

Live Oak County

White Creek field: Brauer, Holland and others' No. 9 Gayle, perforated casing 1,460-72 ft., 165 bbl., pumping.

McMullen County

Munson field: Ohio Fuel Supply Co.'s No. 5 Nueces Land & Livestock Co., 2,101 ft., 19 bbl., pumping.

Nueces County

Agua Dulce field: Union Producing Co.'s No. 4 Sponberg, 5,110 ft., gas well.

Refugio County

Tomoconnor field: Quintana Petroleum Corp.'s No. 12 Heard, perforated casing 5,826-34 ft., 715 bbl., ¼-in. choke.

San Patricio County

East White Point field: Houston Oil Co.'s No. 8 Baldwin, perforated casing 5,646-65 ft., 712 bbl., ½-in. choke. O. W. Killam's No. 8 Taft, sand 5,600-12 ft., 119 bbl., ½-in. choke. Plymouth Oil Co.'s No. 1 Graybill, perforated casing 5,668-72 ft., 127 bbl., 7/64-in. choke.

Starr County

Barbacoas field: Y. & B. Oil Co.'s No. 1 Starr County Cattle Co., 30 ft., dry and abandoned. R. S. Dean, Jr., and others' No. 1-M Starr County Cattle Co., 2,870 ft., dry and abandoned. Sun field: Sun Oil Co.'s No. 7 McKinney, perforated casing 4,652-64 ft., 114 bbl., 23 hours, ½-in. choke.

Victoria County

Victoria field: Bill Harding's No. 1 Bass, 3,035-41 ft., 124 bbl., 7/64-in. choke.

Webb County

Adami field: Arkansas Fuel Oil Co.'s No. 8-A Adami, sand 976-85 ft., 15 bbl., pumping. Arkansas Fuel Oil Co.'s No. 3-B Adami, sand 989-97 ft., 18 bbl., pumping. Arkansas Fuel Oil Co.'s No. 5-B Adami, sand 990-96 ft., 50 bbl., pumping. Glenda Oil Co.'s No. 5 Adami, sand 992-27 ft., 45 bbl., pumping. Volpe field: Magnolia Petroleum Co.'s No. 21 Volpe-Benavides, sand 2,468-75 ft., 50 bbl. of oil, 100 bbl. of salt water, pumping.

WILDCAT OPERATIONS

CALIFORNIA

IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

Company, well, location, and county—	S. T. R.	Depth	Status—
Union Oil, No. 2-4 O'Donnell, Santa Maria, S. Barb.	20-10-34	5,261	flow 1,650 b.d.
Hamilton, W. C., No. 1 Hollister, Goleta, S. Barbara	3- 4-29	1,185	fish, swab
T. O. Oil, No. 5 Mdivani, Mesa, Santa Barbara	28- 4-27	2,020	will redrl.
Oil Group, Inc., No. 1 Hyland, Summerland, S. Barb.	16- 4-26	1,370	sd. sh. drlg.
Coronet Oil, No. 4 Crown, Ojai, Ventura	17- 4-21	1,150	pump water
Ohio Oil, No. 1 Vail, Moor Park, Ventura	10- 2-19	3,360	sd. sh. drlg.
Savage Oil, No. 8 Calumet, Shiells Canyon, Ventura	3- 3-19	4,016	pump off
Continental Oil, No. 13 Grubb, San Miguelito, Vent.	24- 3-24	6,720	flow 2,280 b.d.
C. C. M. Oil, No. 30-B Hobson, Rincon, Ventura	16- 3-24	2,974	sd. sh. drlg.
C. C. M. Oil, No. 9-A Hobson, Rincon, Ventura	15- 3-24	1,998	sd. sh. drlg.
Tide Water A. O., No. 43 V.L.W., Vent. Ave., Vent.	23- 3-23	8,791	sd. sh. drlg.
Tide Water A. O., No. 45 V.L.W., Vent. Ave., Vent.	24- 3-23	6,965	sd. sh. drlg.
Tide Water A. O., No. 17 McGonigle, V. Ave., Vent.	23- 3-23	5,260	sd. sh. drlg.
Tide Water A. O., No. 119 Lloyd, Vent. Ave., Vent.	27- 3-23	2,181	sd. sh. drlg.
Tide Water A. O., No. 122 Lloyd, Vent. Ave., Vent.	23- 3-23	8,970	cmtd. 8,825
Tide Water A. O., No. 21 Hartman, Vent. Ave., Vent.	22- 3-23	9,290	hd. sh. drlg.
Shell Oil, No. 112 Taylor, Ventura Ave., Ventura	29- 3-23	6,780	sd. sh. drlg.
Shell Oil, No. 113 Taylor, Ventura Ave., Ventura	29- 3-23	5,997	sd. sh. drlg.
Shell Oil, No. 35 Edison, Ventura Ave., Ventura	21- 3-23	9,137	flow 1,135 b.d.
Cal. Alliance Pet., No. 2 Hartman, Vent. Ave., Vent.	22- 3-23	7,798	sd. sh. drlg.
Lloyd Corp., No. 4 Dabney, Ventura Ave., Ventura	23- 3-23	10,135	cleaning out
Trigg, H. C., No. 1 Den, Devils Den, Kern	11-25-18	428	O.S. drlg.
Belridge Oil, No. 11-1 fee, North Belridge, Kern	1-28-20	4,998	sd. sh. drlg.
Belridge Oil, No. 23-1 fee, North Belridge, Kern	1-26-28	809	sd. sh. drlg.
Belridge Oil, No. 53-26 fee, North Belridge, Kern	28-27-20	8,410	redrlg. 6,520
Texas Co., No. 1 Theta, Shale Hills, Kern	12-28-19	2,590	sd. sh. drlg.
Vanguard Oil, No. 10 Poso, Mouht Poso, Kern	33-27-28	1,799	rig to pump
Kern Valley Drlg., No. 1 Kern, Round Mtn., Kern	4-29-29	3,021	dry; abd.
Davis Pet., No. 1 Kernco, Kern Front, Kern	13-28-27	1,800	P.B. 1,294
Dick & Dore Oil, No. 18 Kern, Kern River, Kern	34-28-28	525	O.S. drlg.
Dick & Dore Oil, No. 20 Kern, Kern River, Kern	34-28-28	315	O.S. drlg.
Dick & Dore Oil, No. 21 Kern, Kern River, Kern	34-28-28	200	sd. sh. drlg.
Helm & Smith, No. 18 Kern, Kern River, Kern	34-28-28	688	O.S. drlg.
El Tejon O. & R., No. 2 Douglas, Edison, Kern	32-29-29	4,283	P.B. 4,070
Mayes, A. S., No. 1 O.S.E., Edison, Kern	5-30-29	4,160	cleaning out
Goodrum & Vincent, No. 3 S.P., Edison, Kern	31-29-30	414	sd. sh. drlg.
Wood-Callahan Oil, No. 1 Heyden, Edison, Kern	21-30-29	2,064	sd. sh. drlg.
Allied Pet., No. 35 Allied, Mountain View, Kern	19-30-29	4,600	gr. sd. drlg.

IMPORTANT WELLS AND SOUTHERN CALIFORNIA WILDCATS

Company, well, location, and county—	S. T. R.	Depth	Status—
Union Oil, No. 33 Callender, Dominguez, L. A.	29- 3-13	6,579	sd. sh. drlg.
Union Oil, No. 75 Callender, Dominguez, L. A.	29- 3-13	4,962	sd. sh. drlg.
Havenstrite, R. E., No. 2 Larronde, Dominguez, L.A.	32- 3-13	3,998	sd. sh. drlg.
Morton & Elder, No. 2 Dominguez, Dominguez, L.A.	32- 3-13	7,426	cmtd. 7,332
Pongratz Pet., No. 1 Grant, Dominguez, L. Angeles	29- 3-13	6,751	sd. sh. drlg.
Apex Pet., No. 1 Hatfield, Rosecrans, Los Angeles	20- 3-13	9,002	sd. sh. drlg.
St. Anthony Oil, No. 1 Gordon, Rosecrans, L. A.	19- 3-13	6,996	sd. sh. drlg.
Union Oil, No. 37 Rosecrans, Rosecrans, Los Angeles	19- 3-13	7,700	flow 215 b.d.
Union Oil, No. 38 Rosecrans, Rosecrans, Los Angeles	19- 3-13	6,553	sd. sh. drlg.
Union Oil, No. 39 Rosecrans, Rosecrans, Los Angeles	19- 3-13	2,191	sd. sh. drlg.
Royalty Service, No. 1 Cement, Rosecrans, L. A.	20- 3-13	8,390	hd. sd. drlg.
El Rey Oil, No. 1 Westmore, Athens, Los Angeles	2- 3-14	7,260	sd. sh. drlg.
Dominguez Estates, No. 1 fee, Torrance, Los Angeles	2- 4-14	6,080	sd. sh. drlg.
Casa Grande Oil, No. 1 Lopez, San Fernando, L. A.	1- 2-15	2,320	bail mud
Tide Water A. O., No. 12 Porter, Aliso Canyon, L.A.	27- 3-16	8,000	sd. sh. drlg.
Tide Water A. O., No. 13 Porter, Aliso Canyon, L.A.	27- 3-16	1,302	sd. sh. drlg.
Continental Oil, No. 1 Howell, Aliso Canyon, L. A.	2- 2-16	2,597	sd. sh. drlg.
Tamas Oil, No. 1 Perkins, Newhall, Los Angeles	14- 3-16	3,900	cmtd. 1,150
Consolidated Pet., No. 4 Needham, Newhall, L. A.	13- 3-16	4,300	swab oil
Barnsdall Oil, No. 2 R.S.F., Newhall, Los Angeles	27- 4-17	7,045	completing
Barnsdall Oil, No. 9 R.S.F., Newhall, Los Angeles	27- 4-17	3,996	sd. sh. drlg.
Vesta Pet., No. 1 Palos Verdes, Torrance, L. A.	31- 4-13	3,199	sd. sh. drlg.
General Pet., No. 102 P.E., Wilmington, Los Angeles	35- 4-13	3,080	cmtd. 3,070
Ace Oil, No. 1 Harbor, Wilmington, Los Angeles	35- 4-13	3,560	completing
Continental, No. 4 L.A.C.F.C., Wilmington, L. A.	2- 5-13	1,966	sd. sh. drlg.
Hancock Oil, No. 15-A Harbor, Wilmington, L. A.	35- 4-13	1,988	sd. sh. drlg.
Hancock Oil, No. 26-B Harbor, Wilmington, L. A.	35- 4-13	2,540	sd. sh. drlg.
Hansen Oil, No. 1 Harbor, Wilmington, Los Angeles	2- 5-13	3,045	completing
L. A. Basin Oil, No. 8 Kupfer, Wilmington, L. A.	35- 4-13	1,863	sd. sh. drlg.
L. Beach Dev., No. 10-W-X Harbor, Wilmington, L.A.	3- 5-13	1,864	sd. sh. drlg.
Long Beach Dev., No. 8-Z Harbor, Wilmington, L.A.	2- 5-13	1,755	sd. sh. drlg.
Padreson Oil, No. 1-C Harbor, Wilmington, L. A.	33- 4-13	2,647	sd. sh. drlg.
Union Pacific R. R., No. 127, Wilmington, L. A.	3- 5-13	3,920	flow 952 b.d
Union Pacific R. R., No. 128, Wilmington, L. A.	3- 5-13	3,950	P.B. 3,840
Union Pacific R. R., No. 129, Wilmington, L. A.	4- 5-13	3,567	flow 365 b.d.
Union Pacific R. R., No. 131, Wilmington, L. A.	3- 5-13	2,695	sd. sh. drlg.
Union Pacific R. R., No. 132, Wilmington, L. A.	4- 5-13	1,677	sd. sh. drlg.
Union Pacific R. R., No. 22-E, Wilmington, L. A.	3- 5-13	2,425	sd. sh. drlg.
Union Pacific R. R., No. 7-C, Wilmington, L. A.	33- 4-13	5,554	O.S. drlg.
Union Pacific R. R., No. 4-P.D., Wilmington, L. A.	3- 5-13	2,210	sd. sh. drlg.
West. Annex Oil, No. 1 Shaffner, Wilmington, L. A.	35- 4-13	3,460	completing
Wilton Oil, No. 55-10-F, Wilmington, Los Angeles	32- 4-13	3,696	flow 575 b.d.
West Whittier Oil, No. 1 Pellissier, Whittier, L. A.	17- 2-11	4,430	pipe bad
Kern Oil, No. 34 Monterey, Montebello, Los Angeles	2- 2-12	4,581	sd. sh. drlg.
Kern Oil, No. 38 Monterey, Montebello, Los Angeles	2- 2-12	5,470	sd. sh. drlg.
Union Oil, No. 9 Howard & Smith, Montebello, L. A.	11- 2-12	7,550	sd. sh. drlg.
Bush Oil, No. 2 Mihlfred, Montebello, Los Angeles	3- 2-12	5,464	sd. sh. drlg.
Caminol Co., No. 4-20 Cowan, Montebello, L. A.	3- 2-12	7,524	O.S. drlg.
C. A. P. Oil, No. 1 Dutch, Montebello, Los Angeles	11- 2-12	7,657	redrlg. 7,530
Columbia Oil, No. 1 Scheinik, Montebello, L. A.	3- 2-12	7,656	completing
Franru Oil, No. 1 Condaffer, Montebello, L. A.	11- 2-12	7,451	sd. sh. drlg.
Getty-Pac. West., No. 1 Pfister, Montebello, L. A.	10- 2-12	5,695	sd. sh. drlg.
Herley-Kelly, Inc., No. 3 Burke, Montebello, L. A.	2- 2-12	5,990	sd. sh. drlg.
Mabee Co., No. 6 Mulholland, Montebello, L. A.	2- 2-12	6,772	sd. sh. drlg.
Mabee Co., No. 39 Monterey, Montebello, L. A.	2- 2-12	5,476	sd. sh. drlg.
Shoreline Drlg., No. 1 Mont., Montebello, L. A.	11- 2-12	7,591	completing
Texas Co., No. 2 Wilcox, Montebello, Los Angeles	3- 2-12	7,740	redrlg. 7,596
Winlock Oil, No. 1 Win, Montebello, Los Angeles	11- 2-12	7,590	fish swab
Allied Pet., No. 34 Signal, Long Beach, Los Angeles	30- 4-12	9,680	sd. sh. drlg.
Sunset Oil, No. 1 Kirkpatrick, Long Beach, L. A.	19- 4-12	3,160	cleaning out
Caminol Co., No. 3-19 Dominguez, Long Beach, L.A.	11- 4-13	7,674	swabbing
Worland, C. C., No. 1 Oates, Castaic, Los Angeles	18- 5-16	1,960	idle
Great Northern Oil, No. 1 Oak, Richfield, Orange	28- 3- 9	3,390	cleaning out
Welco Oil, No. 1 Yorba, Richfield, Orange	33- 3- 9	4,680	sd. sh. drlg.
Bachmann Pet., No. 1 Tuffree, Yorba Linda, Orange	21- 3- 9	2,340	sd. sh. drlg.
Morgan, George, No. 1 Fricke, Yorba Linda, Orange	21- 3- 9	2,150	pump 90 b.d.
Fullerton Oil, No. 25 Brea, Brea Canyon, Orange	2- 3-10	1,998	sd. sh. drlg.
Southwest Expl., No. 25 State, Hunt. Beach, Orange	10- 6-11	3,751	sd. sh. drlg.
H. R. O. Oil, No. 1 Huntington, Hunt. Beach, Orange	11- 6-11	4,192	sd. sh. drlg.
Pacific Amer. Oil, No. 6 Book, Hunt. Beach, Orange	36- 5-11	3,873	cleaning out
South Basin Oil, No. 93 H.B., Hunt. Beach, Orange	2- 6-11	7,590	sd. sh. drlg.
Thompson, M. N., No. 1 Smith, Costa Mesa, Orange	9- 6-10	4,598	sd. sh. drlg.

OKLAHOMA

Week Ended February 24

NORTHERN OKLAHOMA

Caddo County

Sinclair Prairie Oil Co.'s No. 1 Groman, SW NW NW Sec. 1-16-13w. Wlx. 9,179 ft.; D.S.T. 9,294 ft.; open 1 hr. and rec. 180 ft. mud; no gas or oil; drlg. 9,371 ft. in hd. sd.

Comanche County

Mid Night Oil's No. 1 Howe, NW NW NE Sec. 30-2-13w. O.W.D.D.; O.T.D. 703 ft.; dpnd. to 998 ft.; acd. and swbd. wtr. and S.S.O.; S.D.

Creek County

Bryan Pet. Co.'s No. 1 Ah-Say, NE NW NE Sec. 34-14-7. Drlg. 872 ft.

Zephyr Drlg. Co.'s No. 1 Brown, NE 3E SE Sec. 19-16-10. T.D. 2,825 ft.; rng. 7-in.

Dewey County

Magnolia Pet. Co.'s No. 1 Fiekes, C SW SW Sec. 31-18-14w. Drlg. L. 7,342 ft.

Garfield County

Fain Drlg.'s No. 1 Schnakenburg, NE SE

KEY TO ABBREVIATIONS USED IN DRILLING REPORTS

Abd., abandoned.
Acd., acidized.
B.O., barrels of oil.
B.P.D., barrels per day.
B.D., barrels daily.
B.P., back pressure.
B.R., building rig.
B. ck., bottom choke.
Br. sh., brown shale.
B.S., basic sediment.
C.&P., cellar and pits.
Cd. or Crd., cored.
C.D., correct depth.
Cg., coring.
Cmtd., cemented.
C.O., cleaning out.
Comp., completed.
Compr., compressor.
C.P., casing pressure, also cement through perforations.
Csg., casing.
D.D., drilling (or drilled) deeper.
Drlg., or Drg., drilling.
Drk. or Dk., derrick.
D.S., drill stem.
D.S.T., drill-stem test.
D.P., drill pipe.
D.&A., dry and abandoned.
Fsg., fishing.
Gbo., gumbo.
G.I., gas injection.
Gr., gravity.
Gr. sd., gray sand.
Grn. sh., green shale.
Hd. sd., hard sand.
H.F.W., hole full of water.
I.P., initial production.
L., lime.
Lnr., liner.
Loc., location.
M.I.M., moving in material.
M.I.R., moving in rig.
M.I.R.T., moving in rotary tools.
M.O.T., milling on tools.
O.I.H., oil in hole.
O.S., oil sand.
O.T.D., old total depth.
O.W.D.D., old well drilling deeper.
O.W.P.B., old well plugging back.
P.B., plugging back.
P.B.P., pulling or pulled big pipe.
P.L., pipe line.
P.L.O., pipe-line oil.
Pmpg., pumping.
P.O.P., putting on pump.
P.P., pulled pipe.
Rd. sd., red sand.
Rd. sh., red shale.
Recmt., recemented.
Recvd., recovered.
Rmg., reaming.
Redrlg., redrilling.
Rng., running.
R.O.G., rig on ground.
R.P., rock pressure.
R.U., rigging up.
R.U.R., rigging up rotary.
R.U.S.T., rigging up standard tools.
R.&T., rods and tubing.
S. or Sd., sand.
S.D., shut down.
Sdy. sh., sandy shale.
Sdtrk. or St., sidetracked.
S.D.P.L., shut down for pipe line.
S.D.O., or S.D.W.O., shut down awaiting orders.
S.G., show gas.
Sh.&L., shale and lime.
S.I., shut in.
S.I.P., shut in, prorated.
S.L.M., steel-line measurement.
S.O., show oil.
S.O.G.&W., show of oil, gas, and water.
Spdg. or Spd., spudding.
S.R., straightreaming.
Stdg., standardizing (also standing).
S.W., salt water.
Swbg., swabbing.
T.A., temporarily abandoned.
Tbg., tubing.
T.D., total depth.
T. ck., top choke.
T.P., tubing pressure.
Tr., tract.
Tstd., tested.
U.R., underreaming.
W.I.H., water in hole.
W.O., workover.
W.O.C. or W.O.C.S., waiting on cement to set.
W.O.O., waiting on orders.
W.P., working pressure.
W.S.O., water shutoff.
W.S.O.O.K., water shutoff O.K.
W.S.R. or W.O.S.R., awaiting standard rig
Wtr., water.

SW Sec. 31-21-4w. Sat. 5,805 ft.; S.D. for fuel in Miss. 6,121 ft.

Grant County

Continental Oil Co.'s No. 1 Krichmar SE SE NE Sec. 28-28-5w. Drlg. 1,118 ft.

Hughes County

Hall & Jordan's No. 1-A Barker, SE SE SW Sec. 3-8-9. Drlg. 1,315 ft.

Tom Nix's No. 1-A Warren, SE SE SE Sec. 4-6-8. S.S.O. 903-08 ft.; T.D. 930 ft.; C.O.; N.S.; D.&A.

Walker & Johnson's No. 1 Rogers, NE NE NE Sec. 24-7-9. S.S.O. 565-85 ft.; drlg. plug; to test.

Kay County

Malarnee Oil Co.'s No. 1 Harris, C SW NE Sec. 14-25-1. S.S.O. 3,583 ft.; T.D. 3,787 ft.; shot; C.O.; B. 50 B.O. in 3 hrs.; filled 600 ft. oil; shot; S.I. for tanks.

Kingfisher County

Phillips Pet. Co.'s No. 1 Drape, C NW SE Sec. 30-18-5w. S.D. 350 ft.; wtr.

Kiowa County

Frank Dillard et al's No. 1 Hobbs, SE SE NW Sec. 35-6-17w. Set 6⅝-in. 525 ft.; T.D. 690 ft.

Forrest Linsay's No. 1 Boake, SW SW SW Sec. 29-7-16w. Dolo. 1,029 ft.; Vla. 1,105 ft.; T.D. 1,250 ft.; D.&A.

Lincoln County

Harper & Turner's No. 1 Mann, NW'NW SE Sec. 23-14-5. Drlg. 2,370 ft.

R. M. Purcell et al's No. 1 Wolcott, NW NW NW Sec. 2-13-4e. R.O.G.

Geo. Travis et al's No. 1 Teter, NW NW SW Sec. 24-17-2. Hntn. 4,515-20 ft., S.O.; cg. in Wlx. 4,771 ft.

Youngblood et al's No. 1 Wright, NE NE SE Sec. 32-16-6. Misenr. 3,929 ft.; Htn. 3,934 ft.; Vla. 4,017 ft.; drlg. in Vla. 4,054 ft.

Logan County

Helmerich & Payne's No. 1 McMahon, SW SW SE Sec. 31-17-1. Drlg. 4,635 ft.

McIntosh County

Acme Drlg. Co.'s No. 1 Reynolds, NE NE SW Sec. 22-11-14. Drlg. 525 ft.

Phillips' No. 1 Blankenship, C SW NW Sec. 37-10-13. T.D. 2,910 ft.; U.R. 8-in.

Muskogee County

R. Garrett's No. 1 Escoe, SW SW SE Sec. 16-13-17. Drlg. 1,305 ft.

Payne County

Gardner Pet. Co.'s No. 1 Wetzel, NE SW SE Sec. 2-18-1e. Misnr. 4,878 ft.; Wlx. 5,049 ft., T.D.; to test Msnr.

Helmerich & Payne's No. 1 Kramer, NW NW SE Sec. 24-17-1e. Drlg. 3,-115 ft.

Pontotoc County

Crescent Oil Co.'s No. 3 Thompson, NE NW SW Sec. 29-3-4. T.D. 460 ft.; S.D.

Starr O. & G. Co.'s No. 1 Bowlby, SW SW NW Sec. 29-5-4. Vla. 2,501 ft.; Simp. 2,795 ft.; drlg. 2,863 ft.

Pottawatomie County

Alma Oil Co.'s No. 1 Lyday, SE NE SW Sec. 30-6-5. T.D. 3,979 ft.; Schlumbg. showed oil in Earlsboro; perf. 2,730-35 ft., mud; S.D.

Seminole County

Stanolind O. & G. Co.'s No. 1 Aldridge, NW NE SE Sec. 32-9-8. T.D. 3,544 ft.; ran Schlmb.; S.D.

SOUTHERN OKLAHOMA

Atoka County

Brookshire et al's No. 1 Jones, C SW NW Sec. 29-3s-12. T.D. 2,045 ft.; D.P. stk.

Carter County

W. F. Turner's No. 1 Smith, NE SW SE Sec. 16-3s-1w. S.D. 3,640 ft.

Choctaw County

Clyde Ross et al's No. 1 Hardy, SE SE NW Sec. 21-7s-15. Drlg. 1,893 ft.

Jackson County

English Drlg. Co.'s No. 1-A Aetna Life SE SE NE Sec. 26-3n-20w. Arb. 1,615 ft.; T.D. 1,656 ft.; D.&A.

Jones & Robinson's No. 1 Neal, SW SW SW Sec. 8-1s-20w. Rig.

Jefferson County

Fred Land et al's No. 1 Barrett, NE SE SE Sec. 14-6s-6w. Sd. 1,552 ft., S.O.; D. P. stk. at 1,100 ft.; T.D. 1,890 ft.; S.D

Marshall County

Johnson et al's No. 1 Godfrey, SW SE NE Sec. 14-6s-6e. Vla. 2,627 ft.; S.S.O.; T.D. 4,455 ft. in sd.; S.O.; S.D.

May Oil Corp.'s No. 1 Sacrea, SW NE SW Sec. 17-5-5. S.D. 626 ft.

Pure Oil's No. 1 Little, W½ NE SE Sec. 28-5s-7e. Drlg. 4,308 ft. in Vla.

Stephens County

Edwin Bristow et al's No. 1-A Damion, SE NW SW Sec. 25-2s-6w. T.D. 825 ft.; D.&A.

MISSOURI

Adair County

Ettington et al's No. 1-A Clark, NE NE SE Sec. 8-63-14w. Drlg. 425 ft.

DeKalb County

American O. & G. Co.'s No. 1 Thompson, C SW SW Sec. 30-58-31w. Cellar.

Holt County

Brin & Nathan's No. 1 Decker, C NW NW Sec. 1-61-38w. T.D. 1,030 ft.; S.D. for csg.

Livingston County

Chillicothe Synd.'s No. 1 Linton, C W½ SE Sec. 15-56-23w. M.I.M.

Macon County

Ray Dorris Drlg. Co.'s No. 1 Jones, NE NW NW Sec. 16-58-17w. M.I. mch.

Schuyler County

T. E. Baldwin's No. 1-A Johnson, NW NE NE Sec. 21-65-15w. T.D. 1,069 ft.; P.B. 1,040 ft.; drlg. 1,073 ft.

IOWA

Union County

Phillips Pet. Co.'s No. 1 Creston, C SE NE Sec. 31-71-30w. Wtr. 1,870 ft.; drlg. 1,925 ft.

NEBRASKA

Richardson County

Pawnee Royalty's No. 1 Boice, CSL N½ NE NE Sec. 18-1-16e. Hntn. 2,276 ft.; dpnd. to 2,292 ft.; P.&F. 78 B.O. and 403 B.W.; S.I.; stor.

Pawnee Royalty's No. 1 Myers, C NW NW Sec. 24-1-1e. Vla. 3,183-86 ft.; S.O.; drlg. 3,600 ft.

Stephens & Uhri's No. 1-A Ogle, NW SE SE Sec. 9-1-14. Rotary tools on ground.

Stephens & Uhri's No. 1 Stauffer, SW SW NE Sec. 21-1n-13e. S.D. 475 ft.

KANSAS

(Week Ended February 24 (Descriptions are East unless marked otherwise)

Barton County

Phillips' No. 1 Wondra, CWL SW NE Sec. 15-17-12w. Lans. 3,049 ft.; 700 ft. O.I.H., 10 hrs.; congl. 3,292 ft.; Arb. 3,316 ft.; S.O.&W. 3,318-20 ft.; H.F.W. 3,325 ft., T.D.; P.B. to 3,054 ft.; drld. cmt. and test ½ B.O.P.H.

Butler County

Allison & Talbott's No. 1 Zink, SE SE NE Sec. 32-29-5. Miss. 2,770 ft.; Arb. 3,216-24 ft., T.D.; 1,600 ft. W.I.H.; D. &A.

Atlantic and Sinclair's No. 1 Smith, SE SE NW Sec. 33-33-4. Drlg. 1,829 ft.

Natl. Ref. Co. No. 1 Lankford, SE SE NE Sec. 23-27-5. Base Miss. 3,087 ft.; Simp. 3,163 ft.; T.D. 3,170 ft.; H.F.W.; D.&A.

Natl. Ref. Co.'s No. 1 Smith, NE NW SE Sec. 9-28-5. Miss. 2,740 ft.; drlg. 2,-900 ft.

Cowley County

Atlantic and Sinclair's No. 1 Smith, SE SE NW Sec. 33-33-4. Tpka. 1,365 ft.; drlg. 1,582 ft.

Markey & Talbot's No. 1 Anderson, C N½ NE NW Sec. 21-30-3. S.D. 2,240 ft.

Markey & Mission's No. 1-A Hunt, SW SW NE Sec. 16-34-5. S.D. 1,025 ft.

Ellsworth County

Cities Service Oil Co.'s No. 1 Padlen S.O. 2,836 ft.; T.D. 3,113 ft.; P. 595 B. W. and no oil in 21 hrs.; P. 25 B.O. and 589 B.W. in 22 hrs.; P.B. 2,838 ft.; P. 7½ B.O. and 100 B.W. in 24 hrs. D.&A.

Lauck & Moncrief's No. 1 Ehler, CWL SW NW Sec. 35-16-10w. Lans. 2,943 ft.; Arb. 3,295-97 ft.; R.U.S.T. 3,297 ft.

Gove County

Cities Service's No. 1 Victory, CWL NW¼ Sec. 36-13-30w. Drlg. 4,575 ft.

Greenwood County

A. A. Hinze et al's No. 1 Hester, NW SW NE Sec. 1-22-12. S.D. 510 ft.

Marylyn Oil's No. 1 Burke, NE NE SW Sec. 27-24-11. S.D. 815 ft.

Rex & Morris' No. 1-A Wright, C N½ Lot 16, Sec. 30-28-8. Drlg. 2,005 ft.

C. L. Sheedy et al's No. 1 Hook, NW SW NW Sec. 4-22-10. Drlg. 1,575 ft.

Jefferson County

McLaughlin Sons, Inc.'s No. 1 McLaughlin, SW NE NW Sec. 4-10-20. T.D. 1 915 ft.; whpstk. 1,858 ft.; P.B. 1,550 ft.; W.O.C.

Johnson County

Thurow et al's No. 1 Green, C SW¼ Sec. 25-14-22e. Burg. 1,038 ft.; S.S.O.; base Miss. 1,473 ft.; drlg. 1,495 ft.

McPherson County

Aladdin Pet. Co.'s No. 1 Bitikofer, CNL NE NW Sec. 1-20-1w. Cellar.

Marion County

Harrington & Lorieaux's No. 1 Belton. SE SE NE Sec. 30-17-4. S.D. 640 ft.

Polhamus et al's No. 1 Noone, NW NW SE Sec. 18-18-3. Drlg. 2,905 ft.

H. H. Rover's No. 1 Kroch, NE NE NW Sec. 28-18-4. S.D. 780 ft.

Reno County

Dutton et al's No. 1 Green, SE SE SE Sec. 8-23-4w. W.O.C. 214 ft.

Shell's No. 1 Frazee, NE SE NE Sec. 33-25-8w. Lans. 3,220 ft.; Miss. 3,803 ft.; drlg. 4,003 ft.

Rice County

Mid-Plains Oil Co.'s No. 1 Newkirk, CSL SW SW Sec. 14-18-7w. Misnr. 3,244 ft.; S.O.; Vla. 3,370 ft.; 5-in. 3,371 ft.

Pryor & Lockhart's No. 1 Southern, C N½ NE NE Sec. 14-19-10w. Drlg. 2,-340 ft.

Rooks County

Seaney & Clampitt's No. 1 Morrison, CSL SW NE Sec. 32-10-17w. Loc.

Russell County

I. W. Murfin et al's No. 1 St. Aubyn CSL SW SE Sec. 1-15-15w. Tpka. 2,710 ft.; Lans. 3,000 ft.; drlg. 3,077 ft.

Webb & Wakefield's No. 1 Schmidtberger, CNL NE SW Sec. 17-13-15w. Lans. 3,048 ft.; S.S.O.&W. 3,079-83 ft.; Arb. 3,308-12 ft.; S.O.

Sedgwick County

G. A. Fuller's No. 1 Stilt, CSL SE NE Sec. 21-27-1w. Drlg. 1,435 ft.

Sunray Oil Co.'s No. 1-A McMillan, CWL NW NW Sec. 14-29-2w. Drlg. 1,765 ft.

Stafford County

A. M. Landon et al's No. 1 Coen, SE SE SE Sec. 15-23-14w. Drlg. 2,030 ft.

ARKANSAS

Columbia County

Ark. Fuel Oil Co.'s No. 2-B King, C SE NW Sec. 21-17-20. O.W.W.O.; went dead; drld. out cmt. and cd. 7,684-88 ft.; rec. 1½ ft. por. perm. col. L.; D. S.T. 7,675-88 ft.; ⅝-in. ck. top and ¾-in. ck. bttm.; open 1 hr., tstd. 6,500 ft. S.W.; P.B. 7,640 ft.; swbd. S.W.; P.B. 7,665 ft.; reperf. 7,668-75 ft.; acd. with 2,800 gal.; swbd. S.W.; prep. re-acd. 7,688 ft.

Atlantic Ref. Co.'s No. 1 Gunnels, 182 ft. N, C SW SW Sec. 19-17-19. Set csg. 3,128 ft.; W.O.C.

Hassie Hunt's No. 2 McWilliams, NE NE Sec. 16-18-19. 9⅝-in. csg. 2,109 ft.; set 5½-in. csg. 8,250 ft.; W.O.C.

McAlester Fuel Oil Co.'s No. 1 H. Sayers unit, C NE NW Sec. 15-18-22. Drlg. 4,045 ft.

J. K. Mahoney's No. 2 E. Riley, C NE NE Sec. 14-18-19. Drlg. rd. sdy. sh. 7,-520 ft.

Oliphant Oil Co.'s No. 1 Rowe, 460 ft. N, 660 ft. E, SW cor. Sec. 16-17-20. Drlg. rd.&gr. sh. 6,613 ft.

Placid Oil Co.'s No. 2 J. W. Boothe unit, C NW SW Sec. 20-17-19. Drlg. rd.&gr. sh. 6,415 ft.

Standard Oil Co. of La.'s No. 1 A. W. Gunnels et al, C SW NW Sec. 20-17-19. Set 9⅝-in. csg. 2,181 ft.; drlg. ch. 2,210 ft.

Tide Water Asso. Oil Co. and Seaboard Oil Corp.'s No. 1 W. T. Beene, C NE NW Sec. 14-18-19. Pits.

Tide Water Asso. Oil Co. and Seaboard Oil Corp.'s No. 2 J. T. Beene, C NE NW Sec. 15-18-19. Set 13⅜-in. csg. 132 ft.; drlg. 3,270 ft.

Tide Water-Seaboard Oil Co.'s No. 1 W. Mack, C SW NE Sec. 16-18-19. Drlg. rd.&gr. sh. 7,142 ft.

G. H. Vaughn's No. 1-D J. Jones, 495 ft. S, 660 ft. W NE cor. NE SE Sec. 21-17-20. T.D. 7,634 ft., L.; rng. csg.

Craighead County

Pennark, Inc., No. 1 R. M. Martin, SE cor NE NE Sec. 35-14-3e. T.D. 5,092 ft.; ran electric log; S.D.; hd. L.

Howard County

Wm. James, tr.'s No. 3 I. M. Rooke, 50 ft. SW of No. 1, Sec. 2-8s-27w. Drlg. 548 ft.

Lafayette County

East Texas Ref. Co. et al's No. 1-C C Warren et al. C NE SE NW Sec. 24-16 24. Tstd. S.W. 3,504-24 ft.; P.B. 2,275 ft.; drld. to 2,345 ft.; 5½-in. csg. 2,323 ft.; T.D. 2,345 ft.; srng. swb.

Lonoke County

Lunnon Howell & Ford's No. 1 City of Cabot, C NE Lot 1, Blk. 6, Sec. 18-4n-9w. Set 4½-in. csg. 878 ft.; T.D. 882 ft.; tstd. dry; srng. D.D.

J. F. Russell's No. 1 J. T. Gunter, 440 ft. N, 577 ft. W, SE cor. Sec. 17-5n-10w. S.D. 2,124 ft.

Miller County

Dr. J. S. Rushing's No. 1 D. Wood, 1, 681 ft. W, 461 ft. S, NE cor. Sec. 18-20-27. Drlg. sh.&L. 5,640 ft.

Skelly Oil Co. and Pacific Western Oil Corp.'s No. 1 E. C. Wallis, C S½ SE SE Sec. 7-20-27. Set 13⅜-in. csg. 63 ft.; W.O.C.

Standard Oil Co. of La.'s No. 1 W. P. Sturgis, 660 ft. S and W, C Sec. 1-17-27. Bldg. rds.

Nevada County

Berry Asphalt Co.'s No. 9 Groves Ld. & Tmbr. Co., 330 ft. S and W, C Sec. 10-14-20. Set 10-in. csg. 28 ft.; 500 ft. F.I.H.; W.O.S.R.; T.D. 1,266 ft.

Union County—Schuler

Lion Oil Ref. Co.'s No. 7-B Morgan, 330 ft. NW cor. W½ SE Sec. 18-18-17. T. Jones sd. 7,546 ft.; T.D. 7,730 ft.; set 7-in. csg. 7,730 ft.; reperf. 5,571-75 ft., 5,594-96 ft.; and 5,831-33 ft.; swbd. 23 bbl. S.W. and oil in 9 hrs.; pmpg.; no ga.; 5,871 ft.

Phillips Pet. Co.'s No. 5 Brian, 330 ft. SE cor. NW SE Sec. 13-18-18. Set 9⅝-in. csg. 2,249 ft.; T. Jones sd. 7,544 ft.; cg. sd. 7,547 ft.

Union County—Other

Berg & Laney's No. 1 Cutrer, 150 ft. N, 660 ft. W, SE cor. NW SW Sec. 21-17-14. Cd. 2,727-28 ft.; rec. 7-in. por. sd.; cd. 2,728-35 ft.; rec. 7½ ft. soft por. sd., salty taste; S.D., wtr. sd. 3,054 ft.

Bob Branch's No. 1 J. M. Davis, 130 ft. SW cor. SE NW Sec. 28-16-14. T.D. 2,760 ft.; lost part of core bbl.; S.D. 3,296 ft.

Delta Drlg. Co.'s No. 1 C. T. Grace, C SE SE Sec. 31-17-14. Set 10¾-in. csg. 815 ft.; T. Sur. L. 6,701 ft.; T. por. 6,-708 ft.; S.W. 6,712 ft.; tstd. mud, S.W.&S.O. 6,701-27 ft.; T.D. 6,819 ft.; flwg. est. 350 B.F., 30% S.W.; 70% oil through D.S.; T.P. 400 lb.

Kinard, Curtis et al's No. 1 J. A. Kelly, 330 ft. SW cor. SE SW SW Sec. 9-17-14. R.U.

Ouachita Union Oil Corp.'s No. 1 Ramsey est., 330 ft. NE cor., SE NW Sec. 26-17-14. Set 10-in. csg. 107 ft.; set whpstk. 3,042 ft.; S.D., rd. sh. 3,490 ft.

LOUISIANA

NORTH LOUISIANA

Bienville Parish

Harry Hanbury's No. 1 Holston unit, 70 ft. from NE cor. SW NE Sec. 28-18-6. Cg. r. sh. 7,047 ft.

Bossier Parish

Gulf Ref. Co.'s No. 20 C. B. Hodges, 3,-131 ft. N, 1,388 ft. W, SE cor. Sec. 24-16-12. T. Pett. L. 5,298 ft.; T. Travis Pk. 5,590 ft.; D.S.T. 8,261-93 ft.; tstd. 220 ft. mud; T.D. 8,647 ft.; no show; P.B. 1,640 ft. to clk.; perf. 1,550-62 ft.

Premier Dev. Co.'s No. 1 Mehaffey, 150 ft. S, 1,980 ft. W, NE cor. Sec. 27-19-11. Set 12½-in. csg. 155 ft.; W.O.C.

Triangle Drlg. Co.'s No. 2-A Schuler et al, 2,201 ft. E, 1,795 ft. S, NW cor. Sec. 13-17-12. Set 5½-in. csg. 3,095 ft.; acd.; swbg.

Union Prod. Co.'s No. 1-B Thigpen-Herold, 1,275 ft. S, 1,279 ft. E, NW cor. Sec. 19-17-11. T. Pettit L. 4,048 ft.; set 5½-in. csg. 5,170 ft.; blwg. gas; T.D. 5,210 ft.

Caddo Parish

Beaudon & Griffin's No. 1 Davidson, Sec. 26-21-16. R.U.

Burnham Drlg. Co.'s No. 5 Wilkinson, Sec. 33-22-16. Drlg. sh. 1,250 ft.

D. T. Cauble's No. 1 Darnell, Sec. 17-22-16. Set 10-in. csg. 80 ft.; S.D.; 2,-540 ft., repair rig.

Davidson & Brown's No. 1 Wells, Sec. 10-21-15. Set 8-in. csg. 1,597 ft.; acd. with 4,000 gal.; T.D. 1,789 ft.

H. H. Dillard's No. 1 Dillard, 595 ft. W, 50 ft. S, NE cor. SW SE Sec. 1-20-16. Set 6⅝-in. csg. 1,330 ft.; will acd.; T. D. 1,480 ft.

T. D. Donnell's No. 3 Barrett et al, Sec. 11-20-16. Set 6⅝-in. csg. 1,418 ft.; acd. with 4,000 gal.; tstg. 1,520 ft.

Duncan & Harrison's No. 1 Carter, Sec. 9-21-16. R.U.

Roger Harris' No. 1 Laines Evans, Sec. 11-20-16. Drlg. sh. 150 ft.

J. H. Hooker's No. 1 Muslow, Sec. 5-20-15. Drlg. sh. 755 ft.
Magnolia Pet. Co.'s No. 30 Dillon, Sec. 24-21-15. Set 6⅝-in. csg. 1,483 ft.; will acd.; T.D. 1,625 ft.
Bobby Manziei's No. 1 City of Shreveport, 660 ft. NW cor. SW¼ Sec. 35-18-14. Cg. 5,557 ft.
Roberts & Murphy's No. 1 Caddo O. & R. Co., Sec. 12-20-16. Acd. with 4,000 gal.; W.O.S.R. 1,518 ft.
Southern Oil Co.'s No. 2 Muslow, Sec. 5-20-15. Drlg. 457 ft.
Stanolind O. & G. Co.'s No. 2 Alexander, 670 ft. E, 2,461 ft. S, NW cor. SE Sec. 21-21-15. Acd. with 3,000 gal.; T.D. 1,750 ft.; W.O.S.R.
Stanolind O. & G. Co.'s No. 1 Lane, Sec. 25-21-15. R.U.
Stanolind O. & G. Co.'s No. 2 Pitts, Sec. 10-21-15. Set 5½-in. csg. 1,611 ft.; T.D. 1,805 ft.; acd. with 3,000 gal.; W.O.S.R.
Stanolind O. & G. Co.'s No. 3 Noel, Sec. 13-21-15. Acd. with 3,000 gal.; T.D. 1,663 ft.; W.O.S.R.
Stanolind O. & G. Co.'s No. 13 Slattery, Sec. 21-21-15. Set 8⅝-in. csg. 69 ft.; set 5½-in. csg. 1,401 ft.; W.O.C.
Joe G. Strahan's No. 2 Hart, Sec. 29-21-16. Set 10-in. csg. 60 ft.; set 5⅛-in. csg. 2,250 ft.; T.D. 2,390 ft.; W.O.S.R.
H. J. Streif's No. 1 Noel est., sec. 12-23-16. Drlg. 1,220 ft.
Jack Terrell's No. 1 Welch, Sec. 3-20-16. Set 6-in. csg. 946 ft.
Texas Co.'s No. 2 Atkins fee, Sec. 7-20-15. Set 6⅝-in. csg. 1,356 ft.; T.D. 1,360 ft.; W.O.C.
Texas Co.'s No. 20-B Noel, Sec. 14-21-15. Drlg. sh. 675 ft.
W. & W. Oil Co.'s No. 4 Ark. F. O. Co., Sec. 12-20-16. S.D. 1,150 ft.; rep. rig.
Sloan Wells' No. 1 Stiles, 3,734 ft. N, 1,706 ft. E, SW cor. Sec. 32-21-16. Set 10-in. csg. 340 ft.; set 6⅝-in. csg. 2,298 ft.; W.O.C.
Ivan W. Wright's No. 1 Moore, Sec. 1-20-16. R.U.

De Soto Parish

Dewey Jaun's No. 1 Frost Lbr. Ind., 6,600 ft. SE cor. SW¼ Sec. 14-22-3e. T. D. 2,949 ft.; S.D.; high wtr.

La Salle Parish

Graham & Harter's No. 40 Urania, 700 ft. S, 500 ft. E, NW cor. SW NW Sec. 18-10-2e. 6⅝-in. csg. 1,514 ft.; tstg. 1,519 ft.
H. L. Hunt and Ark. Fuel Oil Co.'s No. 1 Goodpine Lbr. Co., C NW NW Sec. 18-10n-3e. Fsg. 3,030 ft.; blew out and bridged at 1,200 ft.; drld. bridge and twisted off 2,000 ft. D.S.; left wall hook in hole while fsg.; P.B. 900 ft. whpstk. 900 ft.; ran Schlmb. to 3,039 ft.; drlg. sh.&L. 7,562 ft.
Placid Oil Co.'s No. 9 Cent. La., 810 ft. S, 150 ft. W, NE cor. Sec. 13-10-2e. Drlg. sh. 1,900 ft.

Natchitoches Parish

J. E. Watts' No. 1 Tanner est., 330 ft. SW cor. NW¼ Sec. 18-10-10. Set 10-in. csg. 60 ft.; W.O.C.

Sabine Parish

P. C. Alexander's No. 1 Tilly, 330 ft. SW cor. NE SE Sec. 30-8-12. R.U.
A. R. Chestnut's No. 1 Logan, 330 ft. SW cor. NW NW Sec. 26-10-13. R.U.
R. Chestnut's No. 1 Walden, 330 ft. SE cor. NE NE Sec. 27-10-13. Set 10-in. csg. 42 ft.; set 7-in. csg. 1,458 ft.; T.D. 1,986 ft.; pmpd. S.W.; S.O.; S.D.; W.O.
Hunter Co.'s No. 3-B Sabine, C SE NW Sec. 17-7-13. Set 6-in. csg. 2,111 ft.; W.O.S.R. 2,114 ft.
N. B. Livingston's No. 1 Bowman Hicks, 660 ft. SE cor. SW Sec. 36-9-14. Set 10-in. csg. 110 ft.; D.S.T. 3,125-59 ft.; ¼-in. cks. T.&B.; 35 min.; rec. 150 ft mud and S.G.; rng. 5½-in. csg. 3,508 ft., T.D.; tstd. gas 3,462-3,535 ft.; perf. between 3,134 ft. and 3,462 ft. and tstd. est. 1,000,000 cu. ft. gas, S.O. and S.W.; P.B. 3,200 ft.; tstd. S.W.; S.O. 3,134-50 ft.; acd. with 1,500 gal.; tstd. S.W. and 50 B.O.; R.U. pmp.; T.D. 3,170 ft.
Major Oil Co.'s No. 2 Sabine, 330 ft. SE cor. SE SW Sec. 5-7-13. Set 7-in. csg. 2,061 ft.
Claude H. Smith's No. 1 Whitney Corp., 330 ft. N and E, C Sec. 24-10-14. Cg. sh. 3,189 ft.
J. H. Thames' No. 1 Long Bell, 330 ft. SW cor. NE SE Sec. 5-8-13. T.D. 1,708 ft.; set 7-in. csg. 1,680 ft.; did not tst. 1,708 ft.; T.D. 1,987 ft.; will acd.

Union Parish

We Hope O. & G. Co.'s No. 11 Frost Lbr. Ind., Sec. 14-22-3. Set 6-in. csg. 2,081 ft.; W.O.C.
H. L. Woods' No. 3 Union Power, Sec. 29-21-3. Set 6-in. csg. 2,079 ft.; W.O.C.

Webster Parish

Hassie Hunt's No. 2 Coyle, C SW SE Sec. 22-21-10. No Hllwy. sd.; P.B.; set 5,918 ft.; T.D. 6,294 ft.; tstd. small amt. oil; S.I.
Hunt Oil Co.'s No. 1 Gains, 50 ft. NW C NW NE Sec. 30-21-9. Set 9⅝-in. csg. 5,615 ft.; no Hllwy. sd.; C.O.; cond. mud; res. drlg. 7,840 ft.
Hunt Oil Co.'s No. 1 Jordan, 660 ft. N, 560 ft. W, SE cor. NE Sec. 31-21-10. No Hllwy. sd.; drlg. L.&sh. 7,285 ft.
Hunt Oil Co.'s No. 5 Stewart, 660 ft. N, 560 ft. E, SW cor. NW¼ Sec. 29-21-10. Set 9⅝-in. csg. 5,610 ft.; drlg. 5,718 ft.
Quad Oil Co.'s No. 2 Gray, 730 ft. NW cor. SW¼ Sec. 26-21-10. Set 5½-in. csg. 5,680 ft.; T.D. 5,777 ft.; tstd. 75 B.P.D. oil; Hllwy. sd. 5,693-5,701 ft.; will install flow valves.

SOUTH LOUISIANA FIELDS

Abbeville—Vermilion Parish

Continental Oil Co.'s No. 1 David Meaux, Sec. 9-12s-3e. T.D. 11,359 ft.; T. gas sd. 11,318 ft.; D.S. stk.; P.B. and sidetracked; T.D. 11,545 ft.; perf. csg. 11,330-45 ft.; tstg.
Continental Oil Co.'s No. 1 DeMary, Sec. 17-12s-3e. T.D. 10,624 ft.; 6-in. csg. on bttm.; perf. csg. 10,318-66 ft.; I.P. 47 bbl. dist. per day.
Continental Oil Co.'s No. 1 Motty, Sec 18-12s-3e. T.D. 10,444 ft.; sdtrkd.; drlg. 8,943 ft.

Anse La Butte—St. Martin Parish

Glassell & Glassell's No. 2 Breaux, Sec. 118-9s-5e. R.U.
Iberia Pet. Co.'s No. 1 A. P. Moresi, Sec. 118-9s-5e. Spd.
Emer Line Oil Co.'s No. 1 Nickerson, Sec. 86-9s-5e. T.D. 2,634 ft.; fsg.

Bancroft—Beauregard Parish

Republic Prod. Co.'s No. 15 Columbia Ld. Co., Sec. 21-6s-13w. Loc.
Republic Prod. Co.'s No. 2 Hennigan, Sec. 15-6s-13w. T.D. 7,330 ft.; 5½-in. csg. 7,317 ft.; comp.; no ga.

Barataria—Jefferson Parish

California Oil Co.'s No. 1 Danciger-State, Sec. 2-16s-23e. Spd.
California Oil Co.'s No. 1 State-Bayou, Twp. 16s-23e. Drk.
California Oil Co.'s No. 1 Zeringue-Community, Sec. 2-16s-23e. Loc.
Carter, Perrin & Brian's No. 1 Ruttley Wiseman, Sec. 2-16s-23e. Drlg. sh. 2,620 ft.
Geo. Conover's No. 1 Conover Community, Sec. 22-15s-23e. Loc.
Fohs Oil Co.'s No. 1 Conzelman, Sec. 22 15s-23e. Loc.

Bateman Lake—St. Mary Parish

Texas Co.'s No. 3 State, Sec. 16s-12e Drlg. sh. 10,827 ft.
Texas Co.'s No. 3 Wax Bayou, Sec. 2' 16s-12e. 7-in. csg. 10,984 ft.; drlg. sd. 11,111 ft.
Texas Co.'s No. 4 Wax Bayou, Sec. 21-16s-12e. T.D. 11,007 ft.; 7-in. csg. 11,003 ft.

Baton Rouge—East Baton Rouge Parish

Guaranty Oil Co.'s No. 2 Morgan, Sec. 65-7s-1w. T.D. 6,530 ft.; 5½-in. csg. 6,450 ft.; swbd. S.W.; S.D.
Wm. Helis' No. 2-C Duplantier, Sec. 70 7s-1w. T.D. 6,500 ft.; 7-in. csg. 6,483 ft.; I.P. 275 B.P.D.; 11/64-in. ck.
Wm. Helis' No. 8 Nelson, Sec. 36-7s-1w. Drk.
Lisbon-Iberia Oil Co.'s No. 3-A College Town Community, Sec. 68-7s-1w. T.D. 6,515 ft.; 7-in. csg. 6,503 ft.; I.P. 210 B.P.D.; 12/64-in. ck.

Bay St. Elaine—Terrebonne Parish

Texas Co.'s No. 3 L.L.&E., Sec. 18-22s 18e. Drlg. sdy. sh. 5,994 ft.

Bayou Blue—Iberville Parish

Superior Oil Co.'s No. 2 Schwing Lbr. & Shingle Co., Sec. 74-9s-10e. Drlg. 100 ft.

Bayou Choctaw—Iberville Parish

Standard Oil Co. of La.'s No. 2 Cypress, Sec. 28-8s-11e. Bldg. rd.
Standard Oil Co. of La.'s No. 12 Wilbert, Sec. 53-9s-11e. Ran 10¾-in. csg.; T.D. 5,452 ft.; sdtrkd.; T.D. 3,823 ft.; oil sd. 3,740-3,822 ft.; 7-in. csg. 3,828 ft.; perf. csg. 3,800-20 ft.; flowing by heads; est. 35 bbl. daily.

Bayou des Glaise—Iberville Parish

Humble O. & R. Co.'s No. 2-B Wilberts Sec. 78-8s-8e. 10¾-in. csg. 2,854 ft.; drlg. 6,410 ft.

Black Bayou—Cameron Parish

Shell Oil Co., Inc.'s No. 44 Watkins, Sec. 7-12s-12w. Drlg. sh.&L. 4,945 ft.

Caillou Island—Terrebonne Parish

Texas Co.'s No. 64 State, Sec. 20-23s-20e. Drlg. sd.&L. 5,621 ft.
Texas Co.'s No. 65 State, Sec. 17-23s-20e. Drlg. sdy. sh. 5,896 ft.

Cameron Meadows—Cameron Parish

Magnolia Pet. Co.'s No. 27 Cameron Meadows, Sec. 21-14s-13w. R.U.

Chacahoula—La Fourche Parish

Sun Oil Co.'s No. 1 Cypress, Sec. 75-15s-15e. 13⅜-in. csg. 1,842 ft.; T. salt 6,072 ft.; T.D. 6,088 ft.; P.B. 2,100 ft.; sdtrkd.; T.D. 6,553 ft.; fsg.; sdtrkd.; T.D. 5,544 ft.; P.B. to sdtrk.; T.D. 7,271 ft.; sdtrkd.; T.D. 7,426 ft.; P.B. 4,075 ft.; S.D.
Sun Oil Co.'s No. 7 Dibert, Stark & Brown Cypress Co., Sec. 70-15s-15e. Drlg. sd.&sh. 2,207 ft.

Chalkley Field—Cameron Parish

Humble O. & R. Co.'s No. 1-B Sweet Lake Ld. & Oil Co. 10¾-in. csg. 2,784 ft.; T.D. 8,515 ft.; rmg. hole.
Shell Oil Co., Inc.'s No. 6 Hanszen, Sec. 21-12s-6w. T.D. 8,951 ft.; perf. csg. 8,910-33 ft.; I.P. 880 bbl. P.D.; ¼-in. ck.; well went to S.W.; P.B. 8,940 ft.; I.P. 241 bbl. P.D.; 13/64-in. ck., 1.2 per cent S.W.; killed; retesting.
Shell Oil Co., Inc.'s No. 7-A Hanszen, Sec. 20-12s-6w. R.U.
Union Sulphur Co.'s No. 1 Sweet Lake Ld. Co., Sec. 13-12s-7w. Cg. 8,500 ft.

Cheneyville—Rapides Parish

S. W. Richardson's No. 9 Well, Sec. 53-1s-2e. T.D. 6,591 ft.; 5½-in. csg. 6,495 ft.; perf. csg. 6,440 ft.

Creole—Cameron Parish

Superior Oil Co.'s No. 10 State-Gulf of Mexico, Twp. 15s-8w. T.D. 8,607 ft.; sdtrkd.; T.D. 6,725 ft.; tstg.

Darrow—Ascension Parish

Humble O. & R. Co.'s No. 28 Community, Sec. 30-10s-2e. R.U.
Humble O. & R. Co.'s No. 29 Community, Sec. 30-10s-2e. Loc.
Humble O. & R. Co.'s No. 17 Gumbel, Sec. 36-10s-2e. T.D. 8,570 ft.; P.B. 7,389 ft.; sdtrkd.; T.D. 7,503 ft.; P.B.; sdtrkd.; T.D. 8,341 ft.; 5½-in. csg. 8,339 ft.; perf. csg. 8,274-86 ft.; flwd. 64 B. P.D.; 9/64-in. ck.
Kiva Oil Co. No. 1 Duplessis, Sec. 69 10s-2w. S.D. 2,523 ft.

Dog Lake—Terrebonne Parish

Texas Co.'s No. 10 State, Sec. 1-22s-15e. T.D. 7,918 ft., salt; P.B. 7,825 ft.; sdtrk. csg. 7,772 ft.
Texas Co.'s No. 11 State, Sec. 32-21s-16e 10¾-in. csg. 1,751 ft.; drlg. sh.&L. 6,279 ft.

Eola—Avoyelles Parish

Amerada Pet. Corp.'s No. 1-A Dent., Sec. 10-2s-2e. Loc.
Amerada Pet. Corp.'s No. 2 Dent, Unit 2, Sec. 10-2s-2e. Drlg. sh.; T.D. 8,575 ft.; 5½-in. csg. 8,573 ft.; perf. csg. 8,560-70 ft.; I.P. 681 B.P.D.; ¼-in. ck.
Amerada Pet. Corp.'s No. 3 Dent, Sec. 10-2s-2e. Drlg. sh. 4,830 ft.
Amerada Pet. Corp.'s No. 8 Glaize, Sec. 6-2s-3e. T.D. 8,569 ft.; 5½-in. csg. 8,567 ft.
Amerada Pet. Corp.'s No. 3 Irion, Sec. 6-2s-3e. R.U.
Amerada Pet. Corp.'s No. 1 Monchau, Sec. 1-2s-2e. Drlg. sh. 7,530 ft.
Gulf Oil Corp.'s No. 1 Moullere, Sec. 1-2s-2e. Drlg. sh.&L. 8,330 ft.
G. R. Kenedy's No. 1 Josie Hudson, Sec. 1-2s-2e. R.U.
Magnolia Pet. Co.'s No. 1 O. Q. Foster, Sec. 6-2s-3e. M.I.M.
S. W. Richardson's No. 10 Haas Inv. Co., Sec. 7-2s-3e. Drlg. sh. 3,620 ft.
Sun Oil Co.'s No. 3 Townsend, Sec. 8-2s-3e. T.D. 8,572 ft.; P.B.; sdtrk.; drlg. sh. 8,220 ft.

Fausse Point—Iberia Parish

Sun Oil Co.'s No. 1 Planters Lbr. Co., Sec. 27-11s-8e. Loc.
Texas Co.'s No. 7 State, Sec. 35-11s-8e. R.U.

Gibson—Terrebonne Parish

Shell Oil Co., Inc.'s No. 8 Pelican, Sec. 35-17s-15e. Drlg. sh. 3,045 ft.

Garden Island—Plaquemines Parish

Texas Co.'s No. 40 State-Garden, Sec. 38-23s-33e. Drlg. sdy. sh. 5,760 ft.
Texas Co.'s No. 41 State, Sec. 38-23s-33e. T.D. 6,404 ft.; 7-in. csg. 6,236 ft.

Golden Meadow—La Fourche Parish

Bateman Drlg. Co.'s No. 1 Harry Louviere, Sec. 9-19s-22e. T.D. 5,560 ft.; 5½-in. csg. 5,260 ft.; perf. csg. 5,150-80 ft.; S.D.
Bennett O. & R. Co.'s No. 1 Philosate, Sec. 12-19s-22e. T.D. 8,605 ft.; perf. csg. 8,360-8,400 ft.; blew out, flwg. oil and gas.
Brown & Woods' No. 1 S. Hogan, Sec. 9-19s-22e. T.D. 2,710 ft.; P.B. to 1,500 ft.; sdtrkd.; T.D. 2,672 ft.; 7-in csg. on bttm.; perf. csg. 2,650-65 ft.; would not flow; S.D.
Taylor Fithian's No. 1 Cheramie, Sec 12-19s-22e. Drk.
Wm. Helis' No. 3 Gaspard, Sec. 9-19s-22e. 6-in. csg. 2,655 ft.; T.D. 2,664 ft.; sanded up; S.D.
Geo. Lilly's No. 1 Collins, Sec. 12-19s-22e. T.D. 5,500 ft.; 5-in. csg. 5,498 ft.; perf. csg. 5,455-60 ft.; sanded up.
Jim McMurray Prod. Co.'s No. 2 Collins, Sec. 12-19s-22e. T.D. 5,500 ft.; 5½-in. csg. 5,500 ft.; perf. csg. 5,453-65 ft.; I.P. 198 B.P.D.; ½-in. ck.
M. H. Marr et al's No. 2 B. & D. unit, Sec. 17-19s-22e. Loc.
M. H. Marr et al's No. 4 Adam Terrebonne, Sec. 9-19s-22e. Drk.
Martex Oil Corp.'s No. 1-C Rebstock Community, Sec. 2-19s-22e. Drlg. 1,500 ft.
Martex Oil Co.'s No. 3-A Rebstock, Sec. 2-19s-22e. T.D. 2,685 ft.; 5-in. csg. 2,685 ft.; perf. csg. 2,630-62 ft.; would not flow.; S.D.
Fred Shield's No. 1 Lafont, Sec. 2-19s-22e. 10¾-in. csg. 103 ft.; S.D.
Terouche Oil Co.'s No. 2 Cheramie, Sec. 12-19s-22e. Drk.
Texas Co.'s No. 6 State-Catfish Lake, Sec. 2-20s-21e. T.D. 2,675 ft.; 7-in. csg. 2,648 ft.
Texas Co.'s No. 7 Falgout Holding Co., Sec. 9-19s-22e. T.D. 7,940 ft.; rmg.
Texas Co.'s No. 11 Falgout Holding Co., Sec. 9-19s-22e. Drlg. 500 ft.
Texas Co.'s No. 9 Golden Meadow, Sec. 78-19s-21e. T.D. 5,175 ft.; 7-in. csg. 5,158 ft.
Texas Co.'s No. 3 La Terre Co., Sec. 1 20s-21e. T.D. 5,673 ft.; sdtrkd.; drlg. sh.&L. 8,890 ft.

Grand Bay—Plaquemines Parish

Gulf Oil Corp.'s No. 7-A Grand Prairie Lv. Dist., Sec. 5-20s-19e. Loc.
Gulf Oil Corp.'s No. 8-A Grand Prairie Dist., Sec. 5-20s-19e. Loc.
Gulf Oil Corp.'s No. 4 State, Sec. 20-19s-19e. Drlg. 4,736 ft.
Texas Co.'s No. 1 State-Lookout Pass, Sec. 48-20s-18e. Loc.
Texas Co.'s No. 2 State-Lookout Pass, Sec. 31-19s-19e. Drlg. sh.&L. 10,255 ft.

Grand Lake—Cameron Parish

Amerada Pet. Corp.'s No. 3 State, Sec. 12-13s-4w. T.D. 9,004 ft.; run csg.
Superior Oil Co.'s No. 8 State-Lake, Twp. 13s-4w. Loc.
Superior Oil Co.'s No. 7 State, Sec. 11-13s-4w. Drlg. 8,967 ft.

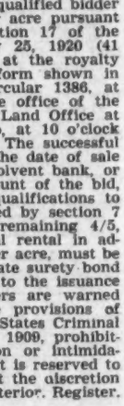
Hackberry—Cameron Parish

Harrison & Abercrombie's No. 1 Doiron, Sec. 37-12s-10w. 10¾-in. csg. 1,441 ft. drlg. sh. 5,710 ft.
Stanolind O. & G. Co.'s No. 21-A Cameron

LEGAL

Department of the Interior, United States Land Office, Las Cruces, New Mexico. Notice is hereby given that a lease of the oil and gas deposits in the NE¼ SW¼, SW¼ SW¼, NW¼ SE¼, and E½ SE¼ Sec. 35, T. 17 S., R. 27 E., N.M. P.M., New Mexico, containing 200 acres, in the Empire Oil and Gas Field, is offered to the responsible qualified bidder of the highest bonus per acre pursuant to the provisions of section 17 of the leasing act of February 25, 1920 (41 Stat. 437), as amended, at the royalty rate scale in the lease form shown in General Land Office Circular 1386, at a sale to be held in the office of the Register of the District Land Office at Las Cruces, New Mexico, at 10 o'clock A. M. on April 3, 1940. The successful bidder must deposit on the date of sale a certified check on a solvent bank, or cash, for 1/5 of the amount of the bid, and file a showing of qualifications to receive the lease required by section 7 of Circular 1386. The remaining 4/5, together with the annual rental in advance at the rate of $1 per acre, must be paid and a $5,000 corporate surety bond must be furnished prior to the issuance of the lease. The bidders are warned against violation of the provisions of section 59 of the United States Criminal Code approved March 4, 1909, prohibiting unlawful combination or intimidation of bidders. The right is reserved to reject any and all bids at the discretion of the Secretary of the Interior. Register. Paul A. Roach, Register.

The Hall Spiral Casing Guide
DOES 4 IMPORTANT JOBS AT ONCE!



Spiral spring blades on the Improved Hall Casing Guide contact the entire mud column and the *complete circumference* of the wall. . .

1. **Trowels the wall of the hole, removing superfluous mud.**
2. **Breaks viscosity in complete mud column, eliminating channeling.**
3. **Centers casing shoe when passing obstructions, caves, whipstocks, casing windows, etc.**
4. **Centers casing string to assure uniform cement flow.**

RESULT—THE HALL CASING GUIDE PRECONDITIONS THE WALLS . . . HELPS ELIMINATE BLOW-OUTS . . . AND ASSURES TIGHTER, MORE UNIFORM CEMENT JOBS.

Does not groove walls to form circulation channels as conventional centralizers do.

Simple . . . Rugged . . . Easily Installed.

Write for complete details and new reduced price list!

Sold Through All Recognized Supply Houses.

TABLE OF SIZES
Standard Length—42", all sizes.
Standard Bow—5" beyond casing.

To Fit Casing		No. Blades
4½"	— 5-7/64" OD	5
5"	— 5-39/64" OD	5
5½"	— 6-1/8" OD	5
5¾"	— 6-3/8" OD	5
6"	— 6-41/64" OD	6
6⅝"	— 7-1/4" OD	6
7"	— 7-5/8" OD	6
7⅝"	— 8-15/64" OD	7
8⅝"	— 9-13/32" OD	8
9⅝"	—10-7/16" OD	9
10¾"	—11-9/16" OD	10
11¾"	—12-19/32" OD	11
13⅜"	—14-7/32" OD	13
16"	—16-27/32" OD	16

HOUSTON PIPE APPLIANCE CO.
1601 Wesley Street
HOUSTON, TEXAS Ph.—Wanside 4050

Sch. Bd., Sec. 16-12s-10w. Drlg. sh. 8,056 ft.
Superior Oil Co.'s No. 2 Vincent, Sec. 30-12s-10w. T.D. 8,265 ft.; 5½-in. csg. 8,265 ft.; perf. csg. 8,210-60 ft.; I.P. 304 B.P.D.; 10/64-in. ck.
Texas Co.'s No. 17-B State, Twp. 12s-9w. T.D. 6,850 ft.
Texas Co.'s No. 29-B State, Twp. 12s-9w. T.D. 7,383 ft.

Happytown—Iberville Parish

Shell Oil Co., Inc.'s No. 1 Schwing Lbr. & Shingle Co., Sec. 85-7s-8e. Drlg. sd. &sh. 1,219 ft.

Jeanerette—St. Mary Parish

Herton Oil Co.'s No. 6 Roane, Sec. 38-13s-9e. T.D. 10,789 ft.; 7⅝-in. csg. 10,260 ft.; stk. cutting tool; P.B. 10,170 ft.; perf. csg. 9,712-20 ft.; rec. S.W.; perf. csg. 6,635-45 ft.

Jefferson Island—Iberia Parish

Texas Co.'s No. 4 Jefferson Island Salt. Sec. 58-12s-5e. T.D. 8,498 ft.; 7⅝-in. csg. 8,494 ft.
Texas Co.'s No. 3 State, Twp. 12s-5e Drlg. sh. 4,889 ft.

Jennings—Acadia Parish

Brown & Sisson's No. 1 Arnaudet, Sec. 47-9s-2w. M.I.M.
Glassell-Glassell's No. 8 McFarlain, Sec. 41-9s-2w. Drk.
Glassell-Glassell's No. 8 Trusher, Sec. 47-9s-2w. T.D. 9,165 ft.; sdtrkd.; T.D. 8,760 ft.; 7-in. csg. 8,750 ft.; drlg. sh. 10,505 ft.
Gulf Oil Corp.'s No. 42 Arnaudet. Sec. 47-9s-2w. T.D. 7,965 ft.; 7-in. csg. 7,961 ft.
Illes Pet. Co.'s No. 5 Jen-Haywood, Sec. 41-9s-2w. T.D. 2,065 ft.; 6-in. csg. 2,035 ft.
Shell Oil Co., Inc.'s No. 9 Community. T.D. 7,599 ft.; 7-in. csg. 7,599 ft.; perf. csg. 7,510-20 ft.; tstg.
Stanolind O. & G. Co.'s No. 117 Crowley O. & Min. Co., Sec. 48-9s-2w. Loc.
Stricker-Pharis et al's No. 1 Gulf fee. Sec. 45-9s-2w. 16-in. csg. 60 ft.; drlg. sd.&sh. 6,190 ft.

Lafitte—Jefferson Parish

Texas Co.'s No. 15 Lafitte, Sec. 20-17s-24e. T.D. 10,135 ft.; 7-in. csg. 10,123 ft.; perf. csg. 9,725-50 ft.
Texas Co.'s No. 16 L.L.&E., Lafitte, Sec. 17-17s-24e. Loc.
Texas Co.'s No. 6-A Madison Realty Co., Sec. 17-17s-24e. Dredge canal.
Texas Co.'s No. 5 Marrero, Sec. 21-17s-24e. Drlg. sh.&L. 9,772 ft.
Texas Co.'s No. 12 Rigolets Cooperative Fur Co., Sec. 28-17s-24e. T.D. 10,197 ft.; 7-in. csg. 10,182 ft.; perf. csg. 10,000-25 ft.
Texas Co.'s No. 13 Rigolet Cooperative Fur Co., Sec. 29-17s-24e. Dredge canal.
Texas Co.'s No. 3 State, Bayou Norman, Sec. 21-17s-24e. Drlg. sh. 7,663 ft.

La Fourche Crossing—La Fourche Parish

Mikton Oil Co.'s No. 2 Martinez, Sec. 132-15s-17e. 11¾-in. csg. 2,687 ft.; T.D. 4,904 ft.; P.B. 4,700 ft.; T.D. 10,998 ft.; 5½-in. csg. 10,042 ft.

Lake Hermitage—Plaquemines Parish

Gulf Oil Corp.'s No. 11 La Fourche Basin Lv. Dist., Sec. 11-18s-25e. P.B. 1,395 ft.; sdtrkd.; drlg. sh. 1,419 ft.

Lake Mongoulois—St. Martin

Texas Co.'s No. 8 State, Sec. 10-10s-9e. Drk.

Lake Pelto—Terrebonne Parish

Texas Co.'s No. 30 Lake Pelto, Sec. 7-23s-18e. T.D. 5,271 ft., salt; sdtrkd.; T. salt 5,243 ft.; P.B. 3,119 ft.; drlg. sd.&L. 4,323 ft.

La Place—St. James Parish

Pan American Prod. Co.'s No. 1 Godchaux Sugars, Sec. 97-11s-7e. Drlg. sh. 1,125 ft.

New Iberia—Iberia Parish

Acadian Prod. Co.'s No. 4 E. T. Weeks, Sec. 51-12s-7e. Loc.
Wm. Helis' No. 7 J. E. Schwing, Sec. 56-12s-7e. T.D. 8,850 ft.; P.B. 7,840 ft.; T.D. 8,850 ft.; P.B. 8,025 ft.; went back into old hole; P.B. and sdtrk.; 7-in. csg. 8,200 ft.; T.D. 8,244 ft.; T.A.
Wm. Helis' No. 9 Schwing, Sec. 56-12s-7e. T.D. 855 ft.; 7-in. csg. 825 ft.; W. O.S.R.
Wm. Helis' No. 10 Schwing, Sec. 56-12s-7e. R.U.
Texas Co.'s No. 2 Bryant, Sec. 25-12s-7e. R.U.
Texas Co.'s No. 7 Bryant, Sec. 25-12s-7e. Drk.
Texas Co.'s No. 15 Duke, Sec. 26-12s-7e. Drlg. sh.&sd. 2,367 ft.
Texas Co.'s No. 2 Hebert, Sec. 25-12s-7e. T.D. 1,935 ft.; 10¾-in. csg. 1,935 ft.
Texas Co.'s No. 1 H. Perry Walet, Sec. 2-12s-7e. T.D. 9,116 ft.; 7-in. csg. 8,838 ft.; rec. S.W. 7,788-7,920 ft.
Texas Co.'s No. 2 Smith, Sec. 71-12s-7e. Drlg. sh.&sd. 6,369 ft.

North Crowley—Acadia Parish

Humble O. & R. Co.'s No. 1 Reiners, Sec. 45-8s-1e. Drlg. 2,649 ft.
Humble O. & R. Co.'s No. 7 Williams, Sec. 33-8s-1e. Drlg. sh. 6,749 ft.

Paradis—St. Charles Parish

Jolly Pet. Co.'s No. 1 Matthews Oliveira, Sec. 4-14s-20e. Drk.
Texas Co.'s No. 3 L.L.&E. Paradis, Sec. 8-14s-20e. 10¾-in. csg. 1,448 ft.; T.D. 10,490 ft.; 7-in. csg. on bttm.; cd. O.S. 10,188-10,256 ft.; drlg. sdy. sh. 10,915 ft.

Plumb Bob—St. Martin Parish

Texas Co.'s No. 13 St. Martin Ld. Co., Sec. 21-8s-7e. Drlg. sdy. sh. 1,786 ft.

Port Barre—St. Landry Parish

Gulf Oil Corp.'s No. 17 Wilson-Broach, Sec. 4-6s-5e. T.D. 4,861 ft.; P.B. 2,061 ft.; sdtrkd.; T.D. 5,704 ft., salt; P.B. sdtrkd.; drlg. sh.&L. 5,060 ft.
McDannald Oil Co.'s No. 2 Futral, Sec 20-6s-5e. T.D. 5,514 ft.; sdtrkd.; drlg. 4,427 ft.
Y. D. Spill's No. 1 Gaudet, Sec. 4-6s-5e. S.D. 4,700 ft.
Texas Co.'s No. 27 Botney Bay, Sec. 4-6s-5e. Cg. 5,871 ft.
Westgate-Greenland Oil Co.'s No. 1 Jeansenne, Sec. 20-6s-5e. 7-in. csg. 5,286 ft.; perf. csg.; T.D. 5,314 ft.; S.D.

Potash—Plaquemines Parish

Humble O. & R. Co.'s No. 42 Orleans Lv. Dist., Sec. 14-18s-15e. Drlg. sd. 2,776 ft.

Quarantine Bay—Plaquemines Parish

Gulf Oil Corp.'s No. 6-A Orleans Levee Bd., Sec. 7-19s-17e. Dredge canal.
Gulf Oil Corp.'s No. 9 State QQ, Sec. 18-19s-17e. T.D. 8,634 ft.; run 7-in. csg.
Gulf Oil Corp.'s No. 12 State, Sec. 18-19s-17e. Drlg. sdy. sh. 5,712 ft.

Raceland—La Fourche Parish

Amerada Pet. Corp.'s No. 5 South Coast Corp., Sec. 34-15s-19e. R.U.

Sorrento—Ascension Parish

Sorrento Synd.'s No. 2 L. L. Bernard Sec. 22-10s-4e. R.U.

South Jennings—Jeff Davis Parish

Stanolind O. & G. Co.'s No. 1 Clare E. Landry and A. A. Hebert. Drlg. sh. 9,036 ft.
Stanolind O. & G. Co.'s No. 1 Morgan, Sec. 15-10s-3w. Drlg. sh. 4,830 ft.
Stanolind O. & G. Co.'s No. 1 L. Remage, Sec. 9-10s-3w. R.U.

Starks—Calcasieu Parish

W. T. Burton's No. 1 Industrial Lbr. Co., Sec. 29-9s-1w. Run screen to test; T.D. 7,420 ft.; P.B. 7,350 ft.; tstg.

Sweet Lake—Cameron Parish

Pure Oil Co.'s No. 15 Yount Lee, Sec. 12-13s-8w. Spd.

Valentine—La Fourche Parish

Wm. Helis' No. 3 Valentine, Sec. 2-17s-20e. T.D. 7,845 ft.; abd.

Venice—Plaquemines Parish

Tide Water Asso. Oil Co.'s No. 7 Buras Lv. Bd., Sec. 22-21s-30e. 16-in. csg. 205 ft.

Vermilion Bay—Iberia Parish

Texas Co.'s No. 4-B Vermilion Bay, Two. 16s-5e. T. salt 5,855 ft.; T.D. 5,860 ft.; 11¾-in. csg. 4,454 ft.

Villa Platte—Evangeline Parish

Amerada Pet. Corp.'s No. 1 Leona O. Roberie, Sec. 1-4s-2e. M.I.M.
Continental Oil Co.'s No. 1 Coreil, Sec. 36-3s-2e. Drlg. 5,860 ft.
Continental Oil Co.'s No. 2 B. G. Fontenot, Sec. 41-4s-2e. T.D. 8,414 ft.; fsg.
Continental Oil Co.'s No. 5 Oscar Pitre, Sec. 40-4s-2e. R.U.
Continental Oil Co.'s No. 3 Adam Tate Sec. 40-4s-2e. T.D. 9,029 ft.; I.P. 328 B.P.D.; ¼-in. ck.
Continental Oil Co.'s No. 1 David Tate, Sec. 36-3s-2e. Drlg. sh. 8,150 ft.
Continental Oil Co.'s No. 1 J. E. Vidrine, Sec. 1-4s-2e. Drlg. sh. 4,620 ft.
Danciger O. & R. Co.'s No. 1 J. E. Vidrine, Sec. 1-4s-2e. T.D. 10,244 ft.; I.P. 380 B.P.D.; ¼-in. ck.

West Lake Verret—St. Mary Parish

Shell Oil Co., Inc.'s No. 4 Jeanerette 7⅝-in. csg. 10,683 ft.; cg. sh. 11,151 ft.

White Castle—Iberville Parish

Shell Oil Co., Inc.'s No. 1 Forest Home. Drlg. sd.&L. 4,673 ft.

Woodlawn—Jeff Davis Parish

Union Sulphur Co.'s No. 2 Norton, Sec. 12-9s-6w. Drlg. sh. 7,610 ft.
Union Sulphur Co.'s No. 1 Trimble, Sec. 7-9s-5w. Drlg. sh. 9,336 ft.
Woodlawn Oil Corp.'s No. 1 Hebert, Sec 1-9s-6w. T.D. 9,543 ft.; 7-in. csg. 9,170 ft.; perf. csg. 9,139-93 ft.; flwd. S.W. and dist.; well flwd. 100% S.W.; plld. tbg.; set cmt. retainer at 9,175 ft.; sqzd. perf.; reperf. csg. 8,139-42 ft.; flwd. 40 bbl. dist. per day; S.D.

S. LOUISIANA WILDCATS

Acadia Parish

Humble O. & R. Co.'s No. 1 Leger, Sec. 83-8s-2e. Drk.
Vincent, Welch & E. J. Nicklos' No. 1 L. Ruppert, Sec. 21-7s-1w. Drlg. sh. 50 ft.

Assumption Parish

Falcon-Seaboard Drlg. Co.'s No. 1 Alex Simoneaux, Sec. 43-12s-13e. R.U.

Beauregard Parish

Atlantic Ref. Co.'s No. 1 Lutcher Moore Lbr. Co., Sec. 13-5s-12w. Drlg. L.&sh. 8,756 ft.
Atlantic Ref. Co.'s No. 1 Lutcher Moore, Sec. 22-3s-11w. Loc.
Atlantic Ref. Co. No. 1 Rice Ld. & Lbr. Co., Sec. 22-3s-11w. Loc.
Atlantic Ref. Co.'s No. 1 D. A. Whitmer, Sec. 28-3s-11w. 10¾-in. csg. 2,037 ft.; drlg. sh. 6,395 ft.; T. Cockfield sd. 5,684 ft.
California Oil Co.'s No. 3 Long Bell Lbr. Co., Sec. 24-5s-11w. Drk.

Calcasieu Parish

E. W. K. Andreau et al's No. 1 W. W. Blackman, Sec. 20-9s-6w. T.D. 8,027 ft.; abd.
C. L. Arnette's No. 1 Arthur Welch, Sec. 19-10s-12w. 10¾-in. csg. 130 ft.; T.D. 1,670 ft.; abd.

Cameron Parish

Phillips Pet. Co.'s No. 1 Miami Corp., Sec. 11-14s-6w. T.D. 10,195 ft.; well tried to blow out; stk. D.S.; fsg.
Superior Oil Co.'s No. 1 State, Calcasieu Lake, Twp. 14s-9w. R.U.

Iberia Parish

Plymouth Oil Co. et al's No. 1 Lynch McHugh, Sec. 13-12s-10e. 10¾-in. csg. 2,519 ft.; T.D. 9,793 ft.; rmg.

Jeff Davis Parish

Continental Oil Co.'s No. 1 Niblett, Sec. 1-11s-5w. 13⅜-in. csg. 2,085 ft.; drlg. sh.&L. 10,885 ft.
H. M. Naylor's No. 1 Acadia Dev. Co., Sec. 12-10s-2w. Bldg. rd.
Union Sulphur Co.'s No. 1 Somson, Sec. 35-7s-4w. Drlg. sh. 1,517 ft.

Jefferson Parish

Vendome Pet. Co.'s No. 1 Coulon, Sec. 15-15s-23e. Canal comp.

La Fourche Parish

Gulf Oil Corp.'s No. 1-B Bowie Lbr. Co., Sec. 69-15s-19e. Bldg. rd.
Humble O. & R. Co.'s No. 1 Caldwell Sugars, Inc., Sec. 115-14s-15e. Drlg. sd. 2,447 ft.
Tide Water Asso. Oil Co. No. 1 Delta Farms, Inc., Sec. 6-17s-23e. T.D. 11,850 ft.; P.B. T.D. 11,810 ft.; perf. csg. 11,780-11,800 ft.; rec. 30 ft. of dist., 400 ft. drlg. mud; P.B. 11,325 ft.; perf. csg. 11,290-11,305 ft.; rec. S.W.; perf. csg. 11,270-80 ft.; 85 stands oil and S.W.; perf. csg. 8,908-18 ft.; rec. 2 jts. dist.; sqzd. perf.; perf. csg. 8,917-22 ft.; 30-min. D.S.T.; 2,800 lb. W.P.; rec. 4 jts. dist.; sqzd.; perf. csg. 8,750-60 ft.; 26-min. D.S.T. tstd. 2,200 lb. W.P.; made sqz. job; drill out cmt. to 11,280 ft.; prep. to perf. csg. 11,270-80 ft.

Livingston Parish

Roderick Tower, Inc.'s No. 1 James Pirie, Sec. 41-7s-3e. Bldg. rd.

Orleans Parish

W. T. Burton's No. 1 L.&N.R.R., Sec. 18-11s-15e. T.D. 10,405 ft.; P.B. 10,150 ft.
W. T. Burton's No. 2 State, Lake Pontchartrain, Twp. 10s-13e. T.D. 8,075 ft.; losing returns.

Plaquemines Parish

California Co.'s No. 1 Delta Minerals, Sec. 2-15s-24e. 13⅜-in. csg. 2,028 ft.
Gulf Oil Corp.'s No. 1-D Buras Lv. Dist., Sec. 6-23s-31e. 9⅝-in. csg. 8,204 ft. 7-in. csg. 10,103 ft.; T.D. 10,138 ft.; well flwd. S.W.

Rapides Parish

S. W. Richardson's No. 1 Hillyer-Edwards, Sec. 21-1s-3w. 10¾-in. csg. 1,565 ft.; top Sparta sd. 7,025-78 ft.; drlg. sh. 8,267 ft.
Smith & Aarnes' No. 1 Eota Realty Co., Sec. 12-4n-3e. Drk.

St. Bernard Parish

Gulf Ref. Co.'s No. 4 State-R.R. (Lake Borgne), Twp. 12s-15e. 9⅝-in. csg. 8,161 ft.; T.D. 10,632 ft.; P.B. 9,700 ft.; rmd. to 9,658 ft.; lost core bbl.; P.B. sdtrkd. 8,912 ft.; T.D. 10,528 ft.; 7-in. csg. 10,494 ft.; S.D. 10,969 ft.; rep. rig.

St. Charles Parish

R. H. Parker et al's No. 1 C. L. Thompson, Sec. 87-13s-20e. 10¾-in. csg. 2,599 ft.; drlg. sh.&L. 6,065 ft.

St. Landry Parish

Pure Oil Co. et al's No. 1 E. M. Boagni, Sec. 41-6s-4e. 10¾-in. csg. 1,276 ft.; drlg. sh. 9,445 ft.

St. Martin Parish

Wm. Helis' No. 1 Rycade Oil Co., Sec. 33-9s-7e. T.D. 8,899 ft.; sdtrkd. 7,393 ft.; T.D. 9,218 ft.; run electrical survey.

St. Mary Parish

Perry S. Cooney No. 1 A. W. Allain, Sec. 46-13s-9e. S.D. 2,600 ft.
Joe Domingue's No. 1 Allain, Sec. 46-13s-9e. Drlg. sh. 1,610 ft.
Texas Co.'s No. 1 State, Cote Blanche, Twp. 16s-7e. Cd. sd. 7,449 ft.; cd. sdy. sh., S.S.O. 7,334-87 ft.

Terrebonne Parish

Barnsdall Oil Co.'s No. 1 Nelson, Sec. 2-21s-11e. 10¾-in. csg. 2,767 ft.; 8⅝-in. csg. 10,505 ft.; T.D. 11,288 ft.; fsg.
Texas Co.'s No. 4 State, Coon Point, in Lake Caillou, Twp. 23s-14e. Drlg. sh. &L. 2,944 ft.

Vermilion Parish

La. Ld. & Explto Co.'s No. 1 Walter White hrs., Sec. 17-15s-1e. R.U.
Texas Co.'s No. 1 Vermilion Par. Sch. Bd., Sec. 16-13s-4e. T.D. 9,923 ft.; 7⅝ in. csg. 9,918 ft.; T.D. 10,595 ft.; P.B. 10,250 ft.; sdtrkd. 10,300 ft.; cd. S.W. sd. 10,659-79 ft.; T.D. 11,762 ft.; fsg. for sidewall samples at 5,675 ft.

TEXAS

Week Ended February 24

GULF COAST FIELDS

Anchor—Brazoria County

Humble O. & R. Co.'s No. 1 R. H. Carr. Blk. 62. 9⅝-in. csg. 6,950 ft.; drlg. sh. 9,773 ft.
Humble O. & R. Co.'s No. 1 Crockett, J. de Jesus Valderas Sur. 13⅜-in. csg.; drlg. sh. 9,641 ft.
Humble O. & R. Co.'s No. 1 Galaznik & Taylor, J. de Jesus Valderas Sur. 9⅝-in. csg. 6,953 ft.; S.D. 10,500 ft.
Humble O. & R. Co.'s No. 1 Heim & Holland. S. Marsh Sur. Loc.
Glenn McCarthy's No. 1 Gelaznik, Valderas Sur. Cg. 9,976 ft.
Glenn McCarthy's No. 1 Neidringhaus, J. Bradley Sur. 13⅜-in. csg. 926 ft.; drlg. sh. 9,396 ft.
Glenn McCarthy's No. 1 Ida M. Salmon and John Muma, Geo. Robinson Sur. 9⅝-in. csg. 6,860 ft.; T. Frio 8,820 ft.; T.D. 10,756 ft.; perf. csg. 9,820-24 ft.; flwg. 5 bbl. dist. per hr.; 21/64-in. bttm.-hole ck.; ⅛-in. ck. on top; flwd. gas and dist.; killed well; set retainer at 9,374 ft.; perf. csg. 10,495-99 ft.; flwd. dist. and S.W.; perf. csg. 9,820-24 ft.; I.P. 199 B.P.D.; ¼-in. ck.
Glenn McCarthy's No. 1 Kate and Laura Yocum, J. D. Valderas Sur. Spd.
Sun Oil Co.'s No. 1 Morris Stern, Shubal Marsh Sur. 18⅝-in. csg. 128 ft.

Old Ocean—Brazoria County

Harrison & Abercrombie's No. 8 Armstrong, Polly & Chance Sur. Drlg. sd. &sh. 9,220 ft.
Harrison & Abercrombie's No. 7 Bernard River Ld. Dev. Co., C. Breen Sur. Drlg. sh.&sd. 9,826 ft.
Harrison-Abercrombie's No. 3 Larsen, C. Breen Sur. Drlg. sh.&L. 10,130 ft.
Stanolind O. & G. Co.'s No. 1 Hughes, C. Breen Sur. R.U.
Sun Oil Co.'s No. 4 McCampbell, C. Breen Sur. 13⅜-in. csg. 1,505 ft.; 9⅝-in. csg. 7,010 ft.; drlg. sd.&sh. 9,820 ft.

Seabreeze—Chambers County

Sun Oil Co.'s No. 1 Samuelson & Whitney, T.&N.O. Sur. 131. Cored sd., oil odor 8,417-18 ft. and 8,422-23 ft.; T.D. 8,587 ft.; sdtrkd.; drlg. sh.&L. 6,903 ft.

Garwood—Colorado County

Davis & Co., Inc., No. 1 J. R. McLane. I.&G.N. Sur. 41. T.D. 10,536 ft.; set 814 ft. of 5-in. lnr. on bttm.; perf. csg. 10,330-62 ft., 10,394-10,410 ft.; would not flow; reperf. csg. 9,958-84 ft.; swbd. S.W.; trace of gas; perf.; csg. 9,496-9,527 ft.; swb. S.W.; abd.

Big Creek—Fort Bend County

Merrimac Oil Corp.'s No. 1 George, B Wickson Sur. (SW flank). Spd. and S.D.

Rosenberg—Fort Bend County

Humble O. & R. Co.'s No. 1 Skripka, C. N. Simpson Sur. T.D. 8,499 ft.; 7-in. csg. 8,327 ft.; W.O.C.

Caplen—Galveston County

Sun Oil Co.'s No. 1-26 State, S. F. Hughes Sur. Sdtrkd.; drlg. sh. 5,516 ft.
Sun Oil Co.'s No. 2-26 State, S. F. Hughes Sur. Loc.
Sun Oil Co.'s No. 3 Zinn-Forman Sur. 13⅜-in. csg. 100 ft.; drlg. sh.&sd. 6,120 ft.

League City—Galveston County

Phillips Pet. Co. No. 1 Dr. O. Patton (1 mi. E of production). Perf. csg. 9,177-97 ft.; flwd. S.W.; sqzd. perf.; C.O.
Phillips Pet. Co.'s No. 2 J. S. Rice est., J. M. Perry & Austin Sur. T.D. 11,411 ft.; perf. csg. 8,695-8,700 ft.; flwg. dist. and gas.
Phillips Pet. Co.'s No. 4 Stewart Title Guaranty Co., S. F. Austin Sur. 10¾-in. csg. 3,520 ft.; 7⅝-in. csg. 9,510 ft.; T.D. 11,270 ft.; well blew out; killed; rng. reversing tool 8,900 ft.

Clear Lake—Harris County

Humble O. & R. Co.'s No. 28-C West, Wm. Doble Sur. Drlg. sh. 3,610 ft.
Humble O. & R. Co.'s No. 34-C West, S. Murphy Sur. Drlg. sh. 2,168 ft.

Friendswood—Harris County

Humble O. & R. Co.'s No. 3 Moore, A. Whitlock Sur. Drlg. sh. 2,620 ft.

Fannett—Jefferson County

Gulf Oil Corp.'s No. 3 Bordages, J. Probarth Sur. Drlg. sh.&L. 5,330 ft.

Lovells Lake—Jefferson County

Humble O. & R. Co.'s No. 19 Broussard, C. Hillebrandt Sur. Drlg. sh. 5,830 ft.
Humble O. & R. Co.'s No. 4-B Steinhagen, Wm. Carr Sur. 5½-in. csg. 7,792 ft.; T.D. 7,810 ft.; tstg.

North Cheek—Jefferson County

Strake Pet., Inc.'s No. 1 J. H. Phelan, S. Stivers Sur. R.U.
Strake Pet., Inc.'s No. 1 Pipkin, H.T.&B. Sur. 15. Loc.

South China—Jefferson County

Magnolia Pet. Co.'s No. 1 B. E. Quinn, H.T.&B. Sur. 13. Drlg. sh. 7,526 ft.
Titanic Oil Co.'s No. 2-B Guiterman, C. T. Taylor Sur. 12. Spd.

Esperson—Liberty County

General Crude Oil Co.'s No. 9 Davis, D Kokernot Sur. T.D. 8,314 ft.; well blew out, caught fire, cratered.
General Crude Oil Co.'s No. 20 Davis, A. McNeil Sur. Drlg. sdy. sh. 5,768 ft.
General Crude Oil Co.'s No. 11-B Esperson. Drlg. sh. 4,630 ft.

Martha—Liberty County

Stanolind O. & G. Co.'s No. 1 J. D. Ross, I.&G.N. Sur. 7. T.D. 8,164 ft.; 5½-in. csg. 8,160 ft.; tstg.

Segno—Polk County

J. K. Dorrance's No. 5-A Wing, I.&G.N. Sur. 15. T.D. 8,050 ft.; W.O.C.
Gulf Oil Corp.'s No. 4 Quinn, A. Morales Sur. R.U.
Gulf Oil Corp.'s No. 28 Wing, I.&G.N. Sur. 15. T.D. 8,240 ft.; 5½-in. csg. 8,120 ft.
Gulf Oil Corp.'s No. 29 Wing, I.&G.N. Sur. 14. Drlg. sh. 7,730 ft.

Spurger—Tyler County

Republic Prod. Co.'s No. 33 fee, N. Hurd Sur. T.D. 7,710 ft.; W.O.C.
Republic Prod. Co.'s No. 30 Wing, I.& G.N. Sur. 15. Loc.

Hilje—Wharton County

Texas Co.'s No. 2 Peters, E.T.R.R. Sur., Sec. 101. Loc.

GULF COAST WILDCATS

Brazoria County

Glenn McCarthy's No. 1 E. W. K. Andrau, H.T.&B. Sur. 5. 10¾-in. csg. 3,512 ft.; drlg. sh. 10,985 ft.
Glenn McCarthy's No. 2 Houston Farm Dev. Co., J. Perry & E. Austin Sur. 7 10¾-in. csg. 3,492 ft.; drlg. sd.&sh. 10,911 ft.
McDannald Oil Co.'s No. 1 S. A. Hatfield, R. B. Lytle Sur. 4, Lot 51. Drlg. sh. 1,800 ft.
S.E.W. Oil Co.'s No. 1 C. D. Van Werdon, A.C.H.&B. Sur. 87. Drlg. sh. 6,189 ft.
Titanic Oil Co.'s No. 2 S. E. Allen, J. G. and W. McNeil Sur. R.U.
Titanic Oil Co.'s No. 1 T. J. Poole, T.&W. Alley Lge. T. salt 1,900 ft.; drlg. sh. 3,536 ft.

Chambers County

Geo. Anderson et al's No. 1 Veruna Lawrence, W. D. Smith Sur. T.D. 7,215 ft.; S.W. sd.; 5½-in. csg. 7,215 ft.; perf. csg. 7,126-35 ft.; flwd. S.W.; W.O.

Colorado County

Cockburn Oil Corp. No. 1 R. W. Ferrs, H. Chrisman Sur. Loc.

Fort Bend County

H. C. Cockburn's No. 1 G. W. Burkett, Bundieck Sur. Loc.
Temple Hargrove et al's No. 1 Sugar Ld. Ind., A. Alcorn Sur. S.D. 2,900 ft.

Galveston County

Continental Oil Co.'s No. 1 Lobit-Cherardi, Perry & Austin Sur. T.D. 9,839 ft.; sdtrkd.; 7-in. csg. 9,998 ft.; drlg. sh. 10,496 ft.
Standard Oil Co.'s No. 1 State, Sec. 234 10¾-in. csg. 2,001 ft.; T.D. 7,134 ft.; rmg. to straighten hole.
Standard Oil Co. of Texas' No. 61-54 State. Loc.
Sun Oil Co.'s No. 1 State, Sec. 178 13⅜-in. csg. 2,032 ft.

Harris County

Cities Service Oil Co.'s No. 1 Perry V. Cook, Wm. Slayer Sur., Sec. 60. T.D. 7,589 ft.
Gulf Oil Corp.'s No. 1 H. H. Roberts, A. Roberts Sur. T.D. 7,583 ft., S.D.
N. W. Hunter et al's No. 1 Green's Bayou Homesites, S. C. Hiroms Sur. 10¾-in. csg. 810 ft.; S.D. 4,350 ft.
Richard Rodgers et al's No. 1 B. G. Daugherty, W.C.R.R. Sur. R.U.

Jefferson County

Fidelity O. & Roy. Co.'s No. 1 J. J. Craigen, J. E. Broussard Sur. Drlg. sh. 7,036 ft.
Merrimac Oil Corp.'s No. 1 State, Tr. 72. 50 ft. due E of Harwell's abd. hole W.O.; R.U.

Liberty County

Hebert & Smith's No. 1 W. E. Boyt, H &T.C.R.R. Sur. T.D. 8,834 ft.; well tried to blow out; stk. D.S.; prep. to sdtrk.

Matagorda County

Gulf Stream Oil Co.'s No. 1 G. W. Zipprian, Lake Lessassier Sur. T.D. 4,060 ft.; T.A.
Providence Oil Corp.'s No. 1 E. Strawbridge, J. W. E. Wallace Sur. 10¾-in. csg. 1,230 ft.; T.D. 9,015 ft.; abd.
Stanolind O. & G. Co.'s No. 1 General American Life Ins., J. C. Peyton Sur. Loc.
Texas Gulf Prod. Co.'s No. 1 Gulf Tex. Oil Co., Ira Ingram Sur. Drlg.
Van M. Vincent's No. 1 J. F. McNabb Est., E. R. Wightman Lge. Loc.

Montgomery County

H. C. Cockburn et al's No. 1 Bender Montgomery Co. Sch. Ld. and De Crow Sur. Loc.
Continental Oil Co.'s No. 1 Bender est., Montgomery Co. Sch. Ld. Sur. 13¾-in. csg. 1,243 ft.; drlg. sd.&sh. 7,468 ft.
David B. MacDaniel's No. 1 Hattie C. Baldwin, Walker Co. Sch. Ld. Sur. 10¾-in. csg. 1,230 ft.; T.D. 8,900 ft., est.; D.S. stk.
Dick Schwab et al's No. 1 Foster est., De la Garza Sur. Drlg. sh. 7,360 ft.
Sturm & Womack's No. 2 Foster est. Abraham Pevehouse Sur. T.D. 7,265 ft.; abd.
West Conroe Oil Corp.'s No. 1 R. L. Caifee, H. N. McDillon Sur. S.D. 5,017 ft. ft.; tstd. S.W. 4,516-78 ft.

Washington County

J. A. Deering's No. 1 C. W. Bohne, S. Gates Sur. Loc.
Mount Selman Oil Co. No. 1 Fritz Fuelberg, W. Lightfoot Sur. S.D. 4,864 ft.

Wharton County

H. C. Cockburn et al's No. 1 F. T. Reitz, E.T.R.R. Sur., Sec. 59. Top Frio 5,368 ft.; T.D. 6,515 ft.; abd.
O. C. Garvey's No. 1 T. N. Menefee, S. P. Middleton Sur. Drlg.
O. C. Garvey et al's No. 1 Stockton, S. P. Middleton Sur. Drlg. sh. 3,930 ft.
Sam Harrison's No. 1 Neil Carlson, Morris & Cummins Sur. S.D. 6,500 ft.
Magnolia Pet. Co.'s No. 1 C. Swanson, E.T.R.R. 39. 10¾-in. csg. 248 ft.
Dr. T. M. Neal No. 1 fee, Elisha Flack 4,840 ft.
Strake Pet. Corp.'s No. 1 Poole, Sec. 25, G.H.&H. Sur. Drlg. sh. 7,510 ft.

S. W. TEXAS WILDCATS

Aransas County

Continental Oil Co.'s No. 1 St. Charles Co., R. D. Blassman Sur. 18⅝-in. csg 290 ft.; T.D. 9,335 ft.; well blew out; caught fire; fire out; well still blowing.

Atascosa County

John Durst's No. 1 Wright, Edw. Morris Sur. Drlg. 986 ft.
Red Bank Oil Co. et al's No. 1 J. P. Pratt, Francisco de La Garza Sur. 46. 7-in. csg. 2,347 ft.; cg. serp. 3,064 ft.

Bastrop County

C. R. Franklin's No. 1 Oscar McDonald, Martha Baker Sur. Drlg. 1,720 ft.

Bee County

Bunte Bros., Inc.'s No. 1 J. T. Earnest, Bee Co. Sch. Ld. Sur. Drlg. sdy. sh. 5,968 ft.
Mills Bennett Prod. Co. and Anderson-Prichard Oil Co.'s No. 2 Robinson, J. M. Uranga Sur. (Wlx. test, West Tuleta field); 13⅜-in. csg. 2,537 ft.; drlg. sdy. sh. 7,579 ft.
Union Prod. Co.'s No. 56 Ray, T. Hanson Sur.; (Pettus field). Wlx. test; 10¾-in. csg. 4,856 ft.; drlg. sh.&sd. 6,458 ft.

Bell County

J. J. Cormas' No. 1 Jeff Ellis, Elizabeth Berry Sur. S.D. 150 ft.

Bexar County

Joe Noake's No. 1 San Antonio Sub. Irrg. Farm, W. Miller Sur. 180. S.D. 250 ft.
Philtop O. & G. Co.'s No. 2-A Patton, Fernando Rodriguez Sur. Drlg. 1,630 ft.
L. L. Skaggs' No. 2 Braubach, F. Rodriguez Sur. S.D. 602 ft.
J. A. Tarver's No. 1 Florence Lam, Manuel de Luna Sur. 3. 6⅝-in. csg 1,205 ft.; T.D. 1,692 ft.; cd. bkn. sh. 1,638-92 ft.; S.S.O.; bailed est. 10 bbl. oil P.D. before sanding up; S.D.
J. A. Tarver et al's No. 1 Joseph Leonard, Manuel de Luna Sur. 3. Drlg. 996 ft.

Blanco County

E. L. Nixon's No. 3 Crist, John McClenechen Sur. 94 Drlg. 1,300 ft.

Burleson County

H. Y. Barnett's No. 1 Giesenschlag, J W. Hollingsworth Sur. T.D. 1,470 ft.; D.S.T. 1,440-70 ft., rec. brackish wtr.; fsg. for packer.

Caldwell County

Kean & Williamson's No. 1 E. E. Rector, J. Roberts Sur. S.D. 300 ft.

Calhoun County

Coronado Corp. No. 1 K. Welder, Hidalgo Sur., 3 mi. SE Seadrift. "Tight well"; reported to be tstg.; 5½-in. csg. 9,750 ft.; perf. csg. 9,500-9,600-9,700 ft.; rec. S.W.; milling on pkr.

De Witt County

Atlantic Ref. Co.'s No. 1 Pearl Conwell, Chas. Lockhart Sur. Cg. sh. 7,710 ft.
I. K. Howeth et al's No. 1 Keepers, Antonio Lazo Sur. Drlg. sh. 3,940 ft.

Duval County

Adams & Lefevre's No. 1 Wordon-Drought, Juan Lopez Sach Sur. 154. T.D. 1,395 ft.; abd.
Alaska-Tex Oil Corp.'s No. 1 W. P. Peters, B.S.&F. Sur. 791. S.D. 2,939 ft.
J. B. Blanchard et al's No. 1 W. L. Rogers, J. Poitevent Sur. Drlg. 100 ft.
W. L. Catlin et al No. 1 Louis Escapule, J. Poitevent Sur. 73. R.U.
Continental Oil Co.'s No. 2-C Clara Driscoll, Santa Rosalia gr. T.D. 2,332 ft.; abd.
Landreth Prod. Co.'s No. 1 Caballero, J. Poitevent Sur. 281. T.D. 5,500 ft.; abd.
Landreth Prod. Co.'s No. 1-A C. M. Robinson, Paul Henry Sur. 116. Loc.
Standard Oil Co. of Texas' No. 1 Rodriguez, San Pedro de Charco Redondo gr. Drlg. 6,070 ft.

Falls County

J. Shaunfield's No. 1 Barganier, J. M. Graham Sur. Bda. L.; S.S.O.; T.D. 1,188 ft.; recmtd. csg.; W.O.; cmt. failed to hold.

Frio County

Holland Oil Co.'s No. 1 Anna Witting, Dan T. Price Sur. T. clk. 4,750 ft.; T.D. 5,314 ft.; Edw. L.; may abd.

Gonzales County

M. T. Huebner's No. 1 M. P. Smith, R. Plummer Sur. S.D. 1,020 ft.

Guadalupe County

Diamond Half Oil Corp.'s No. 1 W. J. Strey, Josefan de los Cortinos Sur. 49. T.D. 800 ft.; 5½-in. csg. 753 ft.; swbg.
C. E. Euton et al's No. 1 Volkman est., W. J. C. Wilson Sur. 59. Drlg. 56 ft.
A. J. Holifield's No. 1 A. J. Day, Jas. Hinds Sur. T.D. 2,837 ft.; 7-in. csg. 2,357 ft.; P.B. 2,692 ft.; swbd. sulf. wtr.. S.S.O.; P.B. 2,415 ft.; pmpg. est. 2 to 6 B.P.H.
Knute Evjen et al's No. 1 W. C. Brawner, J. D. Pickens Sur. S.D. 2,394 ft. 5½-in. csg. 2,300 ft.; reacd.
F. W. Nute's No. 1 M. T. Howell, Jacob Darst Sur. R.U.
F. D. Spratt's No. 1 Wm. Zuchi, Claiborne Rector Sur. 38. S.D. 710 ft.
Wellington Oil Co.'s No. 1 R. L. Beaty, H.&T.C. Sur. Drlg. 2,430 ft.

Hidalgo County

Brinkocter Oil Co.'s No. 1 Daakam hrs. of Miguel Cano, Porc. 45. T.D. 4,122 ft.; abd.
Gulf State Oil Co.'s No. 2 Cardinas, San Salvador del Tule gr. 16-in. csg. 157 ft. drlg. sh. 7,930 ft.
Humble O. & R. Co.'s No. 1 T. A. Ogg, Rio Bravo subd. Drlg. 8,102 ft.

Jim Hogg County

Daubert & Achning's No. 1 A. Vela, Joseph Odom Sur. 572. T.D. 3,265 ft.; abd.
Humble O. & R. Co.'s No. 2 C. F. Mestena O. & G. Co., C.&M.R.R. Sur. Sec. 389. T.D. 6,406 ft.; abd.
Locke Purnell's No. 1 Sarita, Sur. 619. 10-in. csg. 76 ft.; drlg. 2,736 ft.
C. A. Nibert et al's No. 1, Yeager Sur. 20. S.D. 2,240 ft.

Jim Wells County

Austin Pet. Co. No. 1 H. M. Reed (8 mi. NW Orange Grove), J. Poitevent Sur. Cmtd. surf. pipe 190 ft.; S.D. 210 ft.: abd.; skd. rig 100 ft. N.; T.D. 6,058 ft.; abd.
Rodney DeLange's No. 1-A McNeil, Benito Lopez de Jaen Sur. T.D. 4,930 ft.; D.S.T. 4,915-30 ft.; rec. 20 ft. oil; 5½-in. csg. 4,930 ft.; perf. csg. 4,923-28 ft.; flwg. oil and wash wtr.
Henshaw Bros. et al's No. 1 Gaither, Los Presnos de Arriba gr. Loc.
Reese, Dunn & Tsesmelis No. 1 Perez, Manuel Barrera gr. Cg. sd. 5,384 ft.
Sun Oil Co.'s No. 2 East, A.B.&M. Sur. 39. Loc.

Karnes County

Clyde Eckols' No. 1 J. M. Newberry, Carlos Martinez Sur. 5½-in. csg. 3,002 ft.; T.D. 3,008 ft.; perf. csg. 2,942-49 ft.; swbg.

Kendall County

C. M. Dewey's No. 2 Seidensticker, R Davis Sur. No. 20. S.D. 835 ft.

Kimble County

Austin Bridge Co.'s No. 1 Wilkinson, Brooks & Burleson Sur. S.D. 25 ft.
Schwab-Carlyle & Auld's No. 1 Baker, F. C. Stisser Sur. 417. Spudded.

Kinney County

Cooper Gas Co.'s No. 1 L. L. Farr, Geo. L. Bledsoe Sur. 835. S.D. 567 ft.

Kleberg County

Humble O. & R. Co.'s No. 1 O. J. Mork, Rincon de Santa Gertrudis gr. Drlg. sh. 6,270 ft.
Skelly Oil Co.'s No. 1 State, Laguna de Los Olmos gr., Tr. 385. Driving piling.

Lee County

Fred Pederson et al No. 1 Brown, David Hudson Sur. T. Glen Rose L. 6,600 ft.; drlg. sdy. L. 7,428 ft.; no report.

Live Oak County

H. F. Baker's No. 1 Herring, Stephen Hays Sur. T.D. 1,915 ft.; abd.
E. M. Jones' No. 1 West, Lot 400, Blk. D, of West subd. Drlg. sh. 5,915 ft.
Pocono Dev. Co.'s No. 1 San Antonio Joint Stock Ld. Bnk., Richard Everett Sur. 1. Loc.
W. R. Quinn et al's No. 1 Stolze, J. F. Huizar Sur. 31. R.U.
L. W. Stieren's No. 3 Lange, Thos. Adams Sur. T.D. 1,497 ft.

McMullen County

F. H. Gohlke's No. 3 Miles, Wm. Kohfler Sur. 78. S.D. 410 ft.
Purvis & Appell's No. 1 Nueces Ld. & Livestock Co., R. E. Halter Sur. 26. Loc.
C. D. Scarborough No. 1 First Natl. Bk. of Rosebud, Jas. Garner Sur. S.D. 1,955 ft.

Medina County

T. J. Tapp's No. 1 Bendele, F. Sauer Sur. 117. S.D. 205 ft.
York Pet Co.'s No. 1 Kate Smith, Marie Ihnken Sur. 11. T.D. 950 ft.; 5½-in. csg. 690 ft.; swbd. small amt. of oil.

Milam County

Fritz Fuchs' No. 1 Unnaseh, Jose Justo Liendo Sur. S.D. 1,080 ft.

Nueces County

Houser-Warren & Ginther's No. 1 Lynn Davis, Palo Alto gr. Loc.
John Manley et al's No. 1 Ruegg, Geo. H. Pauls subd. of Driscoll ranch. Loc.

Refugio County

Norsworthy Prod. Co.'s No. 1 Wood, John Sinnott Sur. T.D. 6,508 ft. (cor.); S.D.

San Patricio County

Fred Wood et al's No. 1 C. E. Hart, Wm. G. Burgess Sur. 5½-in. csg. 7,250 ft.; prep. to test.

Starr County

Hebert Aid's No. 1 Camilo Garza, J. J. Gutierrez Porc. 72. S.D. 702 ft.
Clopton, Mitchell et al's No. 1 F. W. Sasbury, J. A. Falcon, Porc. 80. 8¾-in csg. 88 ft.; T.D. 2,757 ft.; S.D.; S.W. sd.; 5½-in. csg. 1,401 ft.; perf. csg. 1,328-33 ft.; I.P. 1 to 3 B.O.P.D.; various chokes.
Interstate Minerals, Inc.'s No. 1 Green & Manning, J. J. Garza Falcon Porc. 81. T.D. 1,732 ft.; 7-in. csg. 1,155 ft.; S.D.
Lynes & Robertson's No. 1 Villareal, C. C.S.D.&R.G.N.G.R.R. Sur. 241. Loc.
Sun Oil Co.'s No. 1 Rodriguez, Santa Teresa gr. Cg. 5,879 ft.

Val Verde County

Joiner Oil Co. et al's No. 1 Clyde Sellers. Drlg. bkn. L. 1,678 ft.; no report.

Victoria County

Colton & Colton's No. 1 W. C. Buckholtz, F. G. Hidalgo Sur., Lot 27. 10¾-in. csg. 710 ft.; S.D. 5,400 ft.
Mayo and Renwar Oil Co.'s No. 1 Bayer, Garcia Sur. T.D. 6,485 ft.; 7-in. csg. 6,333 ft.; rec. S.W. 5,688-91 ft. and 5,780-85 ft.; prep. to D.D.
Mayo, Thompson Drlg. Co.'s No. 1 Ragsdale, V. Garcia Sur. S.D. 5,375 ft.; D. S. stk.
L. L. Smith's No. 1 Carolina Stubbs est., R. Manchola Sur. S.D. 4,813 ft.

Webb County

O. W. Killam's No. 64 Bruni, M. H. Rodriquez Sur. 446. T.D. 1,879 ft.; 5½-in. csg. 1,830 ft.; perf. csg. 1,802-06 ft.; tstg. gas, small amt. oil, and wtr.
Mayfair Oil Corp.'s No. 1 A. M. Bruni, M.H. Rodriguez Sur. 446. 10¾-in. csg. 20 ft.; T.D. 1,852 ft.; 5½-in. csg. 1,852 ft.
Sinclair Prairie Oil Co.'s No. 1 Callaghan Ld. & Cattle Co., B.S.&F. Sur. 585. 13⅜-in. csg. 1,598 ft.; drlg. sh. 2,800 ft.
Sorey Oil Co.'s No. 1 A. M. Bruni, J. V. Borrego gr. T.D. 995 ft.; abd.
Tide Water Asso. Oil Co. No. 7 Bruni, Blk. 7, M. Ariape gr. (deep test Bruni field). T.D. 3,959 ft.; well blew out; hole bridged; stk. D.S.; prep. to P.B. and test approx. 5,600 ft.; perf. D.P. 5,636-45 ft. and 5,621-31 ft.; tstd. dry; sqzd. off; perf. csg. 5,620-30 ft.; tstd. 4 B.O.P.D.; 2,000,000 cu. ft. gas; ¼-in. ck.; T.P. 150 lb.; 350 lb. on D.S.

Williamson County

H. C. Lefors' No. 1 H. J. Priesmeyer, Jehu Bevil Sur. 56. S.D. 1,107 ft.

Wilson County

Henshaw Bros.' No. 1 E. W. Schneider, Don Casper Flores Sur. 10-in. csg. 99 ft.; drlg. sh. 2,610 ft.
W. D. Moore et al's No. 1 Lorens, Morris May Sur. S.D. 75 ft.
E. E. Young's No. 1 O. D. McMeans, C. W. Parrott Sur. R.U.

Zapata County

J. P. Martin et al's No. 1 Serapio Vela, El Grullo gr. T.D. 3,108 ft.; sdtrkd.; T.D. 3,505 ft.; fsg.

WEST TEXAS WILDCATS

Andrews County

Richmond Drlg. Co. and T. F. Hunter's No. 1 University, 660 ft. N and E lines of Sec. 21, Blk. 11, University Sur. Drlg. 4,919 ft.

Crane County

Gulf Oil Corp.'s No. 5 M. B. McKnight, Sec. 1, Blk. 21-B, P.S.L. Sur. S.D.R. 6,100 ft.
Gulf Oil Corp.'s No. 1-K University, 330 ft. N and E lines, Sec. 2, Blk. 31, University Sur. Spdg.
Gulf Oil Corp.'s No. 12 Waddell, Sec. 30, Blk. 24-B, P.S.L. Sur. 12-in. 532 ft.;

S.O. 3,215-20 ft.; S.S.G. 3,635 ft.; trying to S.O. wtr. 3,763 ft.

Crockett County

Continental Oil Co.'s No. 2 Todd, 1,980 ft. S and W lines of Sec. 20, Blk. W, X, G.C.&S.F. Sur. Skd. rig W; M.I.R. 470 ft.

Ector County

Ralph R. Gill's No. 1 Parker, SE¼ Sec. 12, Blk. 45, T-2-S, T.&P. Sur.; deep Holt-horizon test. Drlg. 400 ft.

M. A. Grisham et al's No. 1 R. B. Cowden, 600 ft. from N and E lines, Sec. 4, Blk. 45, Twp. 1n (deep test), T.&P. R.R. Sur. Drlg. 4,302 ft.

I. T. I. O. Co.'s No. 1 Johnson, Sec. 34, Blk. 43, Twp. 1s, T.&P. Sur. Heading 170 B.O.P.D. while drlg. below 4,150 ft.; S.I. 4,171 ft.; est. 200 B.O.P.D. through csg.; made 131 B.O. in 12 hrs.; S.I.; storage 4,171 ft.

Landreth Prod. Corp. and Shell Oil Co., Inc.'s No. 1 J. L. Johnson, Sec. 43, Blk. 43, Twp. 1s, T.&P. Sur. Swbd. 21 B.O. 14 hrs. after acd. at 4,264-76 ft.; test est. 800 ft. O.I.H.; R.U.R. to D.D. to Holt pay; drlg. 5,233 ft.; S.S.O.

Landreth Prod. Corp.'s No. 1 T.X.L., NW cor. Sec. 3, Blk. 43, T-1-S, T.&P. Sur.; deep Holt-horizon test. Prepg. to dpn. from regular pay zone to deep level; drlg. 4,434 ft.

Richmond Drlg. Co. and Rhodes & Tompkins' No. 1 J. L. Johnson, NW cor. Sec. 25, Blk. 43, T-1-S, T.&P. Sur.; deep Holt-horizon test. Drlg. 1,600 ft.

Stanolind O. & G. Co.'s No. 1 W. F. Cowden, SW¼ Sec. 4, Blk. 43, Twp. 1s, T.&P. Sur.; deep-lime test. T. Yates sd. 2,790 ft.; T. Clearfork 5,142 ft.; bailed 68 gal. oil in 15 hrs.; P.B. 5,215 ft.; making est. 100 B.O.P.D.; tstg.

Western & Southern Oil Co.'s No. 1 Smith, NW cor. Sec. 6, Blk. 42, T-1-S, T.&P. Sur.; deep Holt-horizon test. Drlg. 3,100 ft.

Gaines County

Stanolind O. & G. Co.'s No. 1 T. S. Riley, Sec. 11, Blk. H, D.&W. Sur. Shot 4,762-4,864 ft.; C.O.; bailed 1 bbl. hourly before shot; T.D. 4,864 ft.; swbd. 10 B.O. in 8 hrs.; bailed dry and bailed 10 B.W. in 9 hrs.; tstg.; R.U. pmp. 4,-864 ft.

Hockley County

Denver Prod. & Refg. Co. and Helmerich & Payne, Inc.'s No. 1 Whiteface Farms, 660 ft. from S and E lines Labor 22, Lge. 77, Reeves C.S.L. Sur. Prep. drill in; had 72 ft. of sat.

Irion County

W. S. Kelly's No. 1 Yates, Conrad Poppe Sur. 730. S.D.O. 345 ft.

Loving County

J. E. Whitesides' No. 1 fee, Sec. 24, Blk. 76, Prep. run 10-in. 1,132 ft.; S.S.O.; S.D.R. 1,685 ft.

Lynn County

Guthrie Lake Oil Co.'s No. 1 Mary L. Shoe, Sec. 20, Blk. 8, E.L.R.R. Sur.; 800-ft. test. S.D.O. 565 ft.

H. F. Wilcox Oil & Gas Co.'s No. 1 E. L. Powell, 330 ft. from W and 990 ft. from S lines Sec. 134, Blk. 12, E.L. Sur. Drlg. 4,135 ft.

Mitchell County

Ewing & Hanes' No. 1 G. I. Grabie, Sec 195, Blk. 3, H.&G.N. Sur.; 1,500-ft. test. S.D. csg. 274 ft.

N. V. Hilburn's No. 1 E. T. Strain, Sec. 82, Blk. 97, H.&T.C. Sur. S.D. csg. 495 ft.

Pecos County

Humble O. & R. Co.'s No. 1 Young, Sec. 33, Blk. 10, H.&G.N. Sur. Top detrital 5,185 ft.; no Ellenburger L. in drlg. to T.D. of 5,305 ft.

B. McCandless and General Crude Oil Co.'s No. 1 Virginia W. Crockett, Sec. 5, Blk. 110, T.C.R.R. Sur. T. Ellenburger 4,401 ft.; tstg. est. 4,000,000 cu. ft. gas after acd.; rng. tbg.; T.D. 4,479 ft. est. 4,000,000 cu. ft. gas and 365 B.O. P.D.; made 531 B.O. in 5 hrs.; S.I.

Skelly Oil Co.'s No. 1 J. S. Masterson (Ordovician test), Sec. 101, Blk. 10, H. &G.N. Sur. Topped Ellenburger 44 ft. high; flwd. 32 B.O.P.H.; made 518 B. O. in 10 hrs.; tstg.

R. L. Walker's No. 1 White & Baker, Sec. 86, Blk. 194, G.C.&S.F. Sur. S.D. R. 505 ft.

Reeves County

T.A.T. Oil Co.'s No. 1 U. G. Orenderff, Sec. 10, Blk. 59, P.S.L. Sur. Drlg. 1,-657 ft.

Scurry County

Coffield & Guthrie's No. 1 Reiter, Sec. 155, Blk. 97, A.T.&T.C. Sur. P.B. 2,990 ft.; rng. 7-in. 3,500 ft.

Tom Green County

B. C. Mann's No. 1 Joe Funk, 330 ft. N, 1,650 ft. E lines, Sec. 34, Blk. 5, H.& T.C. Sur. S.D. 520 ft.

Dan Short's No. 1 J. G. Davidson, 2,-161 ft. from SL, 2,493 ft. from NW cor. L. P. Moore Sur. S.S.O.&G. 2,660-65 ft.; S.D.R. 3,161 ft.

Ward County

Gulf Oil Corp.'s No. 5 Wristen, Sec. 18, Blk. 5, H.&T.C. Sur.; scheduled Ordovician test. Drlg. 4,500 ft.

Kenneth Slack's No. 1 Bird Hayes, Sec. 148, Blk. 34, H.&T.C. Sur. Fsg. bit 4,-096 ft.

Yoakum County

Sloan & Zook and T. N. Sloan's No. 1 J. E. Fitzgerald, Sec. 23, Blk. D, Gibson Sur., extreme NE cor. of county. 7-in. csg. 4,812 ft.; T.D. 5,658 ft.; prep. D.D.

TEXAS PANHANDLE

Deaf Smith County

Uscan's No. 1 Farwell, Sec. 18, Blk. 3, X. Sur. C.O. 5,650 ft.

Lipscomb County

Phil O'Neil's No. 1 Jacob Koch, NW SW Sec. 539, T.&T.C.R.R. Sur. S.D. 1,100 ft.

Ochiltree County

James R. Macon et al's No. 1 W. R. Norris, SW SE Sec. 212, Blk. 43, H.&T.C. Sur. T.D. 6,274 ft.; test sec. at 5,000 ft.; est. 6,000,000 cu. ft. gas on D.S.T.; tstg.; bailing 6,274 ft.; unloaded csg. at well and preparing to test increasing shows of oil and gas; S.D.W.O. 6,274 ft.

Potter County

Canadian River Gas Co.'s No. 1 City of Amarillo, in city limits just north of city. Drlg. 840 ft.

Lee Whitaker's No. 1 D. Pavillard, Sec. 101, Blk. 2, A.B.&M. Sur. Fish out; S.D. 915 ft., csg.

Sherman County

I. T. I. O. Co.'s No. 1 S. C. Bryant, C NW¼ Sec. 360, Blk. T-1, T.&N.O. Sur. S.D.W.O. 2,739 ft.

E. C. TEXAS WILDCATS

Anderson County

R. H. Williamson's No. 1 O. G. Rogers, Wm. Greenwood Sur., 6 mi. SW of Elkhart. Had gas blowout 4,380-90 ft.; killing flow of 14,000,000 cu. ft.

Angelina County

Ginter Bros.' No. 7 Copes hrs., J. Morin Sur., 3 mi. E of Diboll. S.D. 2,184 ft.

Camp County

W. C. McGlothlin's No. 1 Venters, S. Wright Sur., 3 mi. SE Leesburg. R.U. to D.D. to Pettit zone; present T.D. 7,603 ft.

Cherokee County

C. C. Lanier's No. 1 W. O. Reagan, W. T. Smith Sur., 2¼ mi. E of Mixon. Drk.

R. D. Salisbury No. 1 W. M. Shankle, J. A. Manchaca Sur., 1½ mi. NE Chilton. P.B. 1,103 ft.; S.D.; W.O.

Fannin County

C. Newburn's No. 1 A. G. Allen, M. Caldwell Sur., 7 mi. NE of Banham. Laying wtr. lines.

Henderson County

W. R. Manning's No. 1 Rowe & Baker, J. T. Childers Sur., 6 mi. SW Mabank. R.U.

Hill County

Carter-Bowland's No. 1 J. J. Atchison estate, E. Carroll Sur., 5 mi. W of Hillsboro. S.D. 85 ft.

Houston County

J. C. Wynne et al's (Shell Oil Co., Inc.) No. 1 G. E. Dorsey, M. Salias Sur., 2½ mi. S of Percilla; E 102 ac. of tr.; 10,000-ft. test. D.S.T. 8,541-76 ft.; rec. mud cut with gas and oil; drlg. 10,-672 ft.

Kaufman County

W. H. McGee's No. 1 Rutland Savings Bk., John Baker Sur., 2¼ mi. NE of Tuloss. R.U.

T. G. Shaw, Tr.'s No. 1 Angus Wynne, B. S. Newman Sur., 8 mi. E Kaufman; lower Trinity test. S.D. title trouble.

Limestone County

Peyton Bros.' No. 1 Harris, P. Varella Sur. P.B. to 4,495 ft.; fsg. 4,994 ft.

Murray Samuell and Zephyr Oil Co.'s No. 2 Cannon Barron, NE part of 320-acre tract in W. G. McKenzie Sur, half mile NE of pool opener. T. Pett. 5,594 ft.; T.D. 5,705 ft.; making 2,800,000 cu. ft. gas, 2 bbl. dist.

J. J. Tyrell's No. 1 A. G. Easterling, J. L. Chavert Sur., 11 mi. E of Groesbeck. S.D. 4,010 ft.

Zephyr Oil Co.'s No. 3 C. Peeples, R. Scott Sur., 2 mi. SW of Tehuacana. R.U.

McLennan County

T. M. Smart's No. 1 J. W. Mann, C. O'Campo Sur., 4 mi. S of Waco. S.D. 1,-327 ft.

Nacogdoches County

Melrose Oil Co.'s No. 1 C. N. Wilson, J. Hall Sur., 350 ft. S line and 1,530 ft. E line of survey, 10 mi. SE of town of Nacogoches. S.D. 50 ft.

Navarro County

C. F. Carter's No. 1 Allen Eden, M. Shire Sur., 2 mi. NE of Angus. S.D. 1,201 ft.

Guy Sitton's No. 2 R. D. Fleming, John Harris Sur., 450 ft. E of No. 1 dry hole. Bailed slight show oil and S.D. for test at 1,625 ft.

W. H. Warren's No. 1 L. Grey, E. Powers Sur., 2 mi. SE of Kerens. S.D. 660 ft.; T.D.

Red River County

Dave Flesch's No. 1 Bailey, J. Robbins Sur., 1 mi. W of Bagwell. S.D. 3,415 ft.

Kansas-Oklahoma Pet. Corp.'s No. 1 R. H. Ringwald, A. Moore Sur., 3 mi. W of Manchester. S.D. 1,000 ft.

Robertson County

Rhett Wilder's No. 1 Moise Cerf, J. Erwin Sur., 7 mi. S of Franklin. S.D. 40 ft.

Rusk County

Jeff Bolton's No. 1 Hall Wood, J. I. Sanches Sur., 2½ mi. NW of New Salem. Lost circ. and skd. rig to start new hole; T. Wdbne. with sat. at 4,-145 ft.; S.S.O. 4,201 ft.; S.D. to test.

A. O. Whittington's No. 1 Kangerga Bros., Ign. Castro Sur., 9½ mi. N and slightly E of Pirtle. S.D. 80 ft.

Smith County

Sun Oil Co.'s No. 1 E. B. Huddle, Wm Dickerson Sur., 2 mi. S of discovery dist. producer in Chapel Hill area; Drlg. 7,744 ft.

Trinity County

Davis & Co.'s No. 1 Texas Long Leaf Lbr. Co., A. Henry Sur., 5 mi. S of Loveland. R.U. for Wlx. test; R.U.

Gossage et al's No. 1 First Natl. Bnk., B. F. Wright Sur., S of Trinity. R.U. and S.D.

EAST TEXAS

(Border Counties)

Bowie County

W. E. Niell's No. 1 Lewis Fort, 600 ft. NL, 150 ft. EL, 103-ac. tr., L. Peters Sur. S.D. 960 ft.

Harrison County

J. A. Hughes' No. 1 Taylor, H. McNutt Sur. Big. 2,612 ft.

Marion County—Other

R. W. Cosby's No. 1 Stiles, J. G. Reeves Sur. T.D. 2,406 ft.; W.O.S.R.

B. I. Daniels' No. 1 T. O. Livingston, G Coore Sur. Cg. 2,263 ft.

M. D. Fitzwater's No. 1 C. Moseley, 330 ft. SE cor. 100-ac. tr., W. H. Burton Sur. Drlg. 965 ft.

L. Lindsey's No. 1 Hart, G. Coore Sur. Set 10¾-in. csg. 83 ft.; W.O.C.

J. D. Reynolds' No. 1-C Terry est., 150 ft. S, 1,320 ft. E. NW cor. Lewis Needham Sur. Cg. 2,362 ft.

Sanders & Wyckliffe's No. 1 W. P. Stiles, M. Noll Sur. Set 6-in. csg. 2,218 ft.; T.D. 2,408 ft.; swb. dry; S.D.; W.O.

Marion County—Rodessa

Holcomb & Thomason's No. 1-A Madine, 400 ft. WL, 467 ft. NL, 33.6-ac. tr., A. D. S. Coy Sur. Set 9⅝-in. csg. 1,840 ft.; drlg. sh. 3,860 ft.

Shelby County

W. H. Neel et al's No. 1 J. W. Hanson, C 64-ac. tr., A. Sanford Sur. M.I.M.

Superior Oil Co.'s No. 1 Pickering Lbr. Co., 990 ft. E. 330 ft. N, SW cor. Lot 4, W. J. Crane Sur. T. Midway 1,555 ft.; T. Cane River 1,850 ft.; T. Annona 1,955 ft.; set csg. 2,658 ft.; W.O.C.

NORTH TEXAS WILDCATS

Archer County

C. B. Christie & Phillips' No. 1 H. H. Taylor, 330 ft. from S and 3,358 ft. from W lines of Harvey Cox Sur., Abst. 67. Drlg. 4,120 ft.

D. R. Criswell's No. 1 A. C. O'Donnell, SW cor. Blk. 14, Crawford sub. Drlg. 1,200 ft.

C. W. Clark et al's No. 1 D. D. Strange, 150 ft. from S and E lines Lot 31, Block 5, Clark & Plumb Sur., SE of Archer City. Loc.

Clark-Cox's (Deep Rock Oil Co.) No. 1 J. M. McCarty, NW cor. C. C. Brown, Abst. 20. Loc.

Continental Oil Co.'s No. 1 L. F. Wilson, NE cor. SW¼ Sec. 20, H.&T.C. Sur. (1½ mi. E of Hull-Silk). Drlg. 5,113 ft.

Geo. B. Golden's No. 1 J. C. King, NE cor. Sec. 2422, T.E.&L. Sur. Loc.

Bert Ligon's No. 1-D White, NE cor. Lot 1, Blk. 40, A.T.N.C.L. Sur. (1½ mi. E of Hull-Silk field). Bos. 4,366-92 ft.; running 6⅝-in.

Petroleum Producers Co.'s No. 1 D. L. Wolf, NW cor. Sec. 2, J. Poltevent Sur., Abst. 1310 (5,200-ft. test). Drlg. 5,295 ft.

Roeser & Pendleton's No. 1 J. R. Parkey, Sec. 11, Blk. 3, H.&T.C. Sur. (north outpost to Mankins deep pool). Drlg. 1,250 ft.

E. F. Scott's No. 1 York, SE cor. SW¼ Sec. 1861, T.E.&L. Sur. Loc.

C. W. Snoddy's No. 1 G. & W. Webb, NW cor. Sec. 1897, T.E.&L. Sur. Loc.

Waldo E. Stephens et al's No. 1 Hattie B. Adae, SE part of Blk. 7, Palo Pinto Co. Sch. Lds., 3 mi. SE of Griffin pool. T.D. 5,100 ft. S.D.O.

Baylor County

Staton & Bunch's No. 1 Robertson, C.S. L., NE cor. Blk. 10, Stanton subd. S. S.O. 2,996-3,050 ft., 3,124-34 ft.; S.D.O. 3,535 ft.

Clay County

L. T. Burns' No. 1 E. Henderson, SW cor. SE¼ Sec. 2615, T.E.&L. Sur. Loc

L. T. Burn's No. 1 W. R. Lyon, SW¼ N½ Sec. 89, Byers Bros. sub. Loc.

L. T. Burns' No. 1 J. G. Mullins, 330 ft. from N and E lines of N 160 ac. of Sec. 2617, T.E.&L. Sur. R.U.R.

Shell's No. 1 Davis, Sec. 93, J. H. Belcher, O.W.D.D.; S.D. 5,136 ft.

Shell Oil Co., Inc.'s No. 1 M. L. Henderson, 6,000-ft. test, in Blk. 2606, T. E.&L. Sur. S.S.O. 3,419-36; S.S.O. 3,507-19 ft.; S.S.O. 3,572-85 ft.; S.S.O. 3,655-57 ft.; T.D. 3,824 ft.; cmtd. 4½-in. 3,494 ft.; swab 245 bbl. oil and 37 bbl. S.W. in 24 hrs., 3,494-3,545 ft., T.D. by P.B., R.T. to test.

Cooke County

Cranfill & Staley's No. 1 S. H. Peery, SW B.B.B.&C. Sur., Abst. 145. S.D. 2,505 ft.

Georgian Oil Corp.'s No. 1 W. M. Campbell, SW cor. of Campbell tract, O. F. Leverett Sur. Drlg. 1,400 ft.

Lynch's No. 1 Hellman, SW cor. T. Toby Sur. Loc.

G. V. Minnish's No. 1 Stout & Brewer, S½ of Brewer tract, J. Rodriguez Sur., Abst. 880. Loc.

Mudge Oil Co.'s No. 1 Bonner, 330 ft. from S and E lines of east 30 ac. of west 61 ac. of south 101 ac., A. Emanuel Sur., Abst. 1196. Drlg. 1,108 ft.

Mudge Oil Co.'s No. 1 Sam Seagrave, 330 ft. from SW cor. of 193 ac. lease, O. M. Gray Sur., Abst. 415. Spud and S.D.

C. E. Sykes' No. 1 H. Christian, 1,000 ft. from W and SW lines, J. P. Bailey Sur., Abst. 70. Drlg. 2,260 ft.

Cottle County

J. E. Burns et al's No. 1 J. E. Moss, Sec. 5, Blk. L, A. Forsythe Sur. Jnkd. 225 ft.; skd. 20 ft. S; S.D. 1,823 ft.

Foard County

Foster Pet. Corp.'s No. 1 E. M. Gamble, 4,500-ft. test; E. 180 ac. of 8⅓ Sec. 13, Blk. A, H.&T.C. Sur. Had gas sd. 2,300-20 ft.; est. 5,000,000 cu. ft.; T.D. 3,417 ft.; S.D. to run csg. and test gas sd. 2,300-29 ft.; perf. 2,305-09 ft.; 5 shots; blowing est. 5,000,000 cu. ft. gas and spray S.W.

Ohio Oil Co.'s No. 1 M. E. Rasberry, NE cor. Sec. 26, S.P. Survey, 5,000-ft. test. Loc.

Hardeman County

Carter & Taylor's No. 1 Norton, NW cor. 91-ac tr. in Blk. 3, Robt. Young Sur., 16 mi. N of Quanah. S.D. 256 ft.

Norris & Gilbert's No. 1 Robert Weekley, SW SE Sec. 87, Blk. 16, H.&T.C. Sur. Drlg. 897 ft.

Jack County

J. B. Cooper and Paul P. Steed's No. 1 Mathis, J. H. Nesmith Sur., Abst. 1562. Cd. oil sd. 2,873-79 ft.; T.D. 2,883 ft.; est. 250 B.O.P.D.; swab 100 bbl. in 24 hrs.; will P.O.P.

W. L. Forbes et al's No. 1 N. W. Davis, B.B.&C. Sur. Drlg. 1,830 ft.

Hanlon-Buchanan, Inc.'s No. 1 A. T. Smith, NE cor. Sec. 2, S.P.R.R. Sur., Abst. 2176. Drlg. 3,360 ft.

Harper Pet. Co.'s No. 1 J. W. Kinder, SW¼ Sec. 2667, T.E.&L. Sur., Abst. 762. T.D. 2,160 ft.; S.D.

Pitser & West's No. 1 Sloan, Sec. 2786, T.E.&L. Sur. Rng. 8-in.; cg. dry. sd. 2,770-80 ft.; drlg. 5,080 ft.

H. R. Smith's No. 1 I. G. Yates, SW cor. John Holderman Sur., 6 miles NW Jackboro. Spd.&S.D.

Staley Oil Co.'s No. 1 John Barry, SE cor. of N 164 ac. of Sec. 2642, T.E.&L. Sur. Drlg. 505 ft.

Montague County

W. H. Gant and Continental's No. 1 J. L. Brown, Sec. 58, E.T.R.R. Sur. 6⅝-in. 6,843 ft.; brkn. sdy. L. S.O. 6,843 ft.; treat. 8,000 gal. acd.; test showed O.& G. 7,036-56 ft.; T.D. 7,333 ft.; rng. 5½-in. lnr. at 6,843-7,333 ft.; fsg. swb. and 5,800-ft. line.

Gibson & Jenning's No. 1 Holt, NW cor. Blk 36, Kaufman C.S.L. Sur. Loc.

W. K. Jones' No. 1 E. E. Johnson, Sec. 5, Abst. 230, E.T. Sur. (5,500-ft. test). Core S.S.O. 3,759-73 ft.; test mud on D.S.T.; drlg. 4,598 ft.

W. B. Omohundro's No. 1 Seay, Sec. 32, Blk. 4, H.&T.C. Sur. (5,500-ft. test). Drlg. 5,440 ft.

Wm. J. Payne's No. 1 T. M. Baker, NW¼ Lot 42, W. J. Wells Sur., Abst. 844, 5,000-ft. test. Loc.

Sinclair Prairie Oil Co.'s No. 1 W. B. Howard, W. Wallace Sur., Abst. 841 5,000-ft. test). Sat. gr. wsh. 5,241-49 ft.; filled up 2,500 ft. in 10 min. on D.S.T.; flowed 425 bbl. in 3 hrs.; will run tubing.

Stanolind O. & G. Co.'s No. 1 McCool, NW cor. Jacob Lenow Sur. (¼-mi. W outpost to Rogers field). Drlg. 4,320 ft.

Wichita County

E. C. Harlin, Jr., et al's No. 1 I. H. Kemner, SE cor. Blk. 28, Lge. 1, Denton Co. Sch. Lds. (5,200-ft. test). Loc.

W. B. Omohundro et al's No. 1 L. N. Lochridge, L. Netherly Sur., Abst. 240 (5,000-ft. test). Drlg. 4,400 ft.

W. A. Scarborough's No. 1 Ora Roberts, SW cor. Block 54, Red River Valley Lds. Loc.

Wilbarger County

H. G. Gay's No. 1 A. S. Ross, 1,320 ft. EL, 660 ft. SL, Sec. 65, Blk. 15, H.& T.C. Sur. S.D. 1,900 ft.

Young County

J. T. Conner's No. 1 Wright McClatchey est., SW cor. Sec. 284, T.E.&L. Sur. Spudding.

E. W. Dyer's No. 1 M. G. Chenev et al., Terry Sur., Abst. 1261. S.D. 700 ft.

E. R. Marsh's No. 1 Ed. Burton, NE cor. Blk. 26, J. A. True Sur., Abst. 1640, 4 mi. SE Graham; 4,250-ft. test. Run. 6⅝-in. to 3,804 ft.

A. T. Strong et al's No. 1 E. C. Stovall, Sec. 2946, T.E.&L. Sur. (4,800-ft. test). Drlg. 4,630 ft.

WEST CENTRAL TEXAS DISTRICT

Brown County

Wilson Oil Co., Inc., No. 1 M. Bowden, Sec. 138, W. E. Gilliland Sur. S.D.R. 2,155 ft.

Callahan County

N. D. Gallagher's No. 1 E. Grisson, SE part Sec. 2, Blk. S, S.P. Sur. Loc.

Green & Owens' No. 1 Murray, 156 ft. from N and 1,725 ft. from E lines of Jacob Track Sur. 761, Rng. csg. 865 ft.

Reeves' No. 1 Alexander, NE part of Sec. 12, E.T.R.R. Sur. C.O. 1,060 ft.

A. L. Thomas' No. 1 Abram, NW part Sec. 1, B.B.B.&C. Sur. Loc.

Coleman County

Robertson & Bradford's No. 1 Morris, 330 ft. N, 1,582 ft. W lines, Blk. 2, G.H.&H. Sur. R.U.R.

Comanche County

J. M. Russell's No. 1 P. Scott, SE SW Sec. 25, Blk. 2, H.&T.C. Sur. Loc.

Eastland County

Butler & Horne and E. J. Keough's No. 1 L. Waters, Sec. 83, Blk. 3, H.&T.C. Sur. Drlg. 2,760 ft.

Dobbs Oil Corp.'s No. 1 Mrs. R. L. Poe, 1,320 ft. from S and E lines of SE¼ Sec. 37, Blk. 3, H.&T.C. Sur. Spd. and S.D.

Erath County

T. G. Jackson No. 1 J. W. Taylor, Prater Sur., Abst. 1029, 4 mi. NE of Desdemona. U.R. 2,335 ft.

Fisher County

Montour Prod. Co.'s No. 1 Taggart, 1,980 ft. W and S lines, Sec. 184, Blk. 2, H. &T.C. Sur. (6,000-ft. test). Drlg. 4,410 ft.

S. and D. Daube's No. 2 Bennett, NE¼ Sec. 51, Blk. 2, H.&T.C. Sur. S.D. test lime 3,537-3,704 ft.; swbd. 28 B.O. and 4 B.W. daily at 3,640 ft.; T.D. 3,705 ft. tstg. 3,705 ft.

Hamilton County

A. J. Caldwell's No. 1 W. W. Jones, 1,002 ft. from NE and 150 ft. from SE lines of W. H. Crowder Sur. Drlg. 690 ft.

Wallace & Vickers' No. 2 C. E. Lund, C S½ E 20 ac., N½ SW¼, R. J. Bailey Sur. 51. Rng. csg. 300 ft.

Jones County

J. E. Farrell's No. 1 F. B. Reid, NW¼ Sec. 31, D.&D. Sur. (3,500-ft. test). Drlg. 1,050 ft.

Keeler's No. 1 Radford, SE¼ Sec. 20 Blk. 4, H.&T.C.R.R. Sur. Fsg. tools 1,500 ft.

Roberts' No. 1 J. Jeffreys, Sec. 7, Blk. 15, T.&P. Sur., 1½ mi. W of Sandy Ridge pool. Drlg. 3,280 ft.

Mills County

A. W. Tanner's No. 1 M. J. Ivy, M Rhyne Sur., 2 mi. SW of Ebony; contract depth 1,450 ft. Loc.

Palo Pinto County

J. Jones' No. 1 R. H. Gauldin, NW cor. Sec. 1743, T.E.&L. Sur. Drlg. on iron 1,478 ft.

Parker County

Brown & Gardner Bros.' No. 1 Gilbert, T.&P. Sur., Abst. 1958. S.D.O. 3,905 ft.

Shackelford County

Georgian Oil Corp.'s No. 1 Black ranch, C NE¼ of T.E.&L. Sur. No. 390, 10 miles NE of Albany, Ordovician test. Drlg. 2,150 ft.

Stephens County

Panhandle Ref. Co.'s No. 1 Frank Magers, SE Sec. 1, Blk. 3, S.P. Sur., 1¾ mi. N of Fagg area. Drlg. 300 ft.

Pitser & West and Brazos-Young Oil Corp.'s No. 1 N. G. Price, SE cor. E½ SW Sec. 67, B.A.L. Sur. Saturation in L. 3,510-14 ft.; S.D.; may plug 4,397 ft.

Stonewall County

Shell Oil Co., Inc.'s No. 1 A. E. Smith, Sec. 143, Blk. 1, H.&T.C. Sur.; 6,000-ft. test. S.S.O. 4,395-97 ft.; drlg. 5,286 ft.

Tinsley Wells Go on Pump, But Long Life Indicated

By GEORGE WEBER

JACKSON, Miss., Feb. 26.—The first of a number of pumping units for Woodruff-sand wells at Tinsley are being installed on the Stevens lease of Jones & O'Brien Brothers. This trend to artificial lift has been foreseen for several weeks. Reservoir pressures in the Woodruff sand of the Selma-chalk formation were originally low, and recently, each completion in the horizon has brought further drops in pressure. Tubing pressures which originally averaged over 300 lb. are now in many cases below 100 lb., and several wells require swabbing to keep them on production.

No alarm is felt for the field's production, for it shows indications of long-time continuance on the pump. For the week ended February 21, daily average production was 7,247 bbl., approximately 30 per cent of the estimated potential of the 22 wells in the field.

No new completions were reported for the week at Tinsley. Hassie Hunt's No. 2 Ida Fair, with the Woodruff sand at 4,562-83 ft., has casing set at 4,554 ft. and was swabbed through 2½-in. tubing for an initial flow of 14 bbl. hourly. However, it went dead shortly after, and operators are keeping it on production with swabbing. Completions on the pump may follow in most wells in the Woodruff sand hereafter.

In Monroe County Willmut Gas & Oil Co. met with no success in attempts to increase pressure on a tight-sand section at 2,821-72 ft. by alternately shutting in and reopening the well. Plans now call for shooting the sand section which has showed some gas production. The well is a deep test in the Amory gas area.

The other active wildcat in Northeast Mississippi, G. G. Grasty's No. 1 Kentucky Lumber Co. is drilling with cable tools below 2,000 ft. in lime, where production possibilities are considered good.

In Issequena County E. B. Germany or Tatum, Dunbar & Shaddock's No. 1 Mohanna is drilling below 1,000 ft.

Several new wildcats are indicated for the next few weeks. In Stone County Fohs Oil Co. has completed geophysical surveys with seismograph and gravity meter on its 10,000-acre block and now plans a test well tentatively located in Section 28-2s-11w. P. & M. Oil Co.'s Attala County block on which it had staked a location in October, has been taken over by W. C. Proctor and A. W. Little who are reported making arrangements with Mrs. S. O. Thompson of Texarkana for a test in SE SW SE Section 26-13n-5e.

A Wilkinson County wildcat which may be drilled shortly is Barnsdall Oil Co.'s test, contemplated for Section 14-4n-2w, now that the company has completed geophysical surveys on its block.

Alabama and Georgia

Interest is directed to the east, with activity in two wildcats in Alabama and Georgia. The Alabama test, W. L. McClanahan's No. 1 J. A. Stafford, 8 miles west of Mobile in Mobile County, is scheduled for early drilling. The 8,500-ft. test, in Section 24-7s-3w, on a 25,000-acre block, has derrick erected and a rig is moving in.

Georgia Resources, Inc.'s No. 1 Gilliean of Clinch County, Georgia, continues to hold interest. In running 10-in. casing to a total depth of 736 ft. last week, operators lost the bottom joint in the hole, and are reported drilling by it. Reports of a section of sand in the Hawthorne formation at 390-410 ft., showing a light stain of oil, have prompted the company to plan two additional tests on the 75,000-acre block. One test, to be drilled north of the wildcat, is scheduled for spudding on or before March 15. It will explore the possibilities of the Hawthorne section and possibly drill deeper.

Interest is quickening in the Tallahatchie and Panola county district, known as the Charleston area, where leases are being added to large blocks. Shows of oil and gas in shallow water wells have interested operators.

Geophysical shooting continued active, with 60 crews reported in Mississippi and 6 in Alabama. Most of the parties are working in Central and eastern Mississippi.

MISSISSIPPI

Hinds County

Crescent Oil Mill's No. 1 fee, E side Mill St., fire zone No. 3, City of Jackson, Sec. 3-5-1e. Set 8⅝-in. csg. 822 ft.; Set 5½-in. csg. on btm.; drld out to 2,468 ft.; reported tested 50,000 cu. ft. gas and water; T.D. 2,468 ft.; dpnd. to 2,470 ft.; S.W. incr.; abd.

Issaquena County

W. E. Hall's No. 1 Irby Charping, approx. C NE NW Sec. 29-10n-8w. Drlg.

Locke & Mellard's No. 1 W. Gary, 660 ft. SE cor., NW Sec. 14-9n-8w. Loc.

Tatum, Dunbar & Shaddock's (Germany, Lucy & Fair) No. 1 Mohanna, E½ SW Sec. 9-18n-3e. Set 18-in. csg. 20 ft.; recmtd. 10¾-in. csg. 600 ft.; drlg. 1,000 ft.

Itawamba County

G. C. Grasty et al's No. 1 Ky. Lbr. Co., 1,320 ft. E, 660 ft. S, C Sec. 7-10s-10e. Twisted off D.S.; skd. 24 ft. S and set 10¾-in. csg. 170 ft.; S.O. 1,500 ft.; T. Trenton L. 1,690 ft.; drlg. L. (cor.) 1,960 ft.

Monroe County

Willmut G. & O. Co.'s No. 1 Roberts NW¼ Sec. 18-13s-17w. D.S.T. 2,410-30 ft.; Amory gas zone, dry; S.G. 2,844-52 ft.; hard cemented sd., odor oil 2,821-72 ft.; D.S.T., no results; ran Schlumberger and set 7-in. csg. 2,810 ft.; T.D. 2,879 ft.; flwd. small amt. gas and bailed to bttm.; shut in and opened well intermittently; no pressure inc.; prep. shoot sd. section.

Prentiss County

Home Dev. Co.'s No. 1 Mrs. A. Allen Sec. 8-7s-9e. Drlg. 1,625 ft.; no report.

Sharkey County

Eureka Pet. Co.'s No. 1 W. H. Cooper, 1,980 ft. S, 660 ft. W NE cor. Sec. 13-14n-6w. Drlg. sd. 612 ft.; no report.

Simpson County

Cleve Love et al's No. 1 N. E. Garner, 300 ft. N and E of C Sec. 1-10n-17w. O.W.D.D.; O.T.D. 3,145 ft.; set 10¾-in. csg. 871 ft.; W.O.C.

Yazoo County

Harry Hanbury et al's No. 1 Brooks, SW Sec. 17-10-2. Loc.

Hill & Hill et al's No. 1 Kinkead Plantation, 1,796 ft. SE cor. NE¼ Sec. 31-11-3. 7⅝-in. csg. 128 ft.; rep. rotary; drlg. bl. sh. 4,846 ft.

Hassie Hunt's No. 2 Ida Fair, C SE SW Sec. 13-10-3. T.D. 2,761 ft.; set 7-in. csg. 4,554 ft.; Woodruff sd. 4,562-83 ft.; ran 2½-in. tbg. 4,547 ft.; swbd. in and flowed 14 B.P.H. and went dead; swbg. at intervals to hold on prod.

Hassie Hunt's No. 1 A. G. Johnson, C NE NE Sec. 14-10-3. R.U.

Hassie Hunt's No. 2 A. G. Johnson, C SE NE Sec. 14-10-3. M.I. rig.

Edgar Johnson's No. 2 Brumfield, C SW SE Sec. 2-10-3. Drlg. bl. sh. 4,382 ft.

Jones & O'Brien Bros.' No. 1-C Stevens, C SE NE Sec. 11-10-3. Drld. fault; T. chalk 4,493 ft.; no Woodruff sd.; T.D. 4,690 ft.; P.B. 2,030 ft. and sdtrkd. out 1,830 ft.; new hole off 4° at 2,170 ft.; prep. P.B.

Robt. P. Lake's No. 1 Exum Est., C SW NE Sec. 13-11-2. Drlg. sh. 1,170 ft.

J. R. Lockhart et al's No. 1 Frank Brooks, W½ SE NW Sec. 17-10-2w. T. chalk 4,964 ft.; T. sd. 5,047 ft.; cd. 5,051-55 ft.; cores rec. 5,047-51 and 5,110-25 ft.; showed salty taste; T.D. 5,134 ft.; D.&A.

Nelson Bros.' No. 1 S. S. Stoner, C SE NW Sec. 2-11-5w. Loc.

T. B. Slick, Jr.'s No. 1 W. S. Atkinson, 629 ft. S, 556 ft. E NW cor. NW NE SW Sec. 3-10-3. O.W.D.D.; O.T.D. 5,083 ft.; dpnd. to 5,793 ft.; top Tuscaloosa 5,735 ft.; D.&A.

Slick-Urschel Oil Co.'s No. 1 Slick, 2,075 ft. S, 670 ft. W NE cor. NW¼ Sec. 11-10-3. R.U.

Union Prod. Co.'s No. 4 Perry, C SW NE Sec. 24-10-3. Set 16-in. csg. 50 ft.; drlg. 121 ft.

Union Prod. Co.'s No. 1 Stevens, C NW NW Sec. 13-10-3, O.W.W.O. O.T.D. 6,112 ft. P.B. 4,973 ft.; set 1st retainer 1,820 ft.; perf. 4,808-10 ft.; 2nd retainer 4,898 ft.; recomp. 750 B.P.D.; 50% S.W.; ¼-in. ck.; went dead; S.D.W.O.

Union Prod. Co.'s No. 6 Stevens, C NE NE Sec. 13-10-3. Loc.

Union Prod. Co.'s No. 10 Stevens, C NW NW Sec. 12-10-3. Drlg. 3,871 ft., sh, sd. & L.

Union Prod. Co.'s No. 11 Stevens, SW SE Sec. 12-10-3. Drlg.

Union Prod. Co.'s No. 13 Stevens, C SW NW Sec. 12-10-3. Set 10¾-in. csg. 598 ft.; drlg. sh. 4,711 ft.

Union Prod. Co.'s No. 6 Woodruff, C SW NW Sec. 13-10-3. Set 16-in. csg. 67 ft., 10¾-in. csg. 1,213 ft.; Woodruff sd. 4,497-4,502 ft.; D.S.T. 4,492-4,532 ft.; rec. 880 ft. oil in 10 min.; drld. Stevens sd. 4,859-72 ft.; tstd. S.W.; T.D. 4,931 ft.; P.B. 4,550 ft.; set 5½-in. csg. 4,548 ft.; perf. 4,493-4,502 ft.; tstg.

Whigate Oil Co.'s No. 1 Robertson, 330 ft., NW cor. Sec. 20-10-2. Drlg. bl. sh. 4,829 ft.

ALABAMA

Mobile County

W. L. McClanahan's No. 1 J. Q. Stafford, 330 ft. N, 150 ft. W SE cor. NW SW Sec. 24-7s-3w. M.I. rig.

FLORIDA

Dade County

Wm. G. Blanchard et al's No. 1 Everglades, 200 ft. E, 100 ft. N, SE cor. Sec. 31-53s-35e. Set 16-in. csg. 140 ft.; drlg. sh. 715 ft.; no report.

GEORGIA

Clinch County

Georgia Resources, Inc.'s No. 1 Gilliean, C Land Lot 200, 12th Land Dist. On running 10-in. csg. bottom joint parted; drlg. by csg. 736 ft.; S.O. 390-410 ft.

CRUDE-OIL PRICES IN REPRESENTATIVE FIELDS

Complete crude-price schedules are now being published in the first issue of each month. The last complete schedule was published in the February 1 issue. All changes in crude-oil-price schedules will be published completely in the first issues following the announcement of the changes. Following are representative crude-price schedules in barrels (42 gal.):

East Texas	$1.10
Conroe	1.37
Tepetate, Louisiana	1.08
Smackover, Arkansas, heavy	.73
Illinois basin	1.05
Pecos County, Texas	.78
Lance Creek, Wyoming	.77
Bradford, Pennsylvania	2.75

Gravity Schedules

Top prices include all gravities above grades designated, and low prices include all gravities below grades designated:

	Signal Hill, California*	Oklahoma, Kansas	Gulf Coast Texas
14-14.9	$.065	....	....
15-15.9	.65	....	....
16-16.9	.65	....	....
17-17.9	.65	....	....
18-18.9	.65	....	....
19-19.9	.69	....	$0.86
20-20.9	.73	$0.70	.88
21-21.9	.78	.72	.90
22-22.9	.82	.74	.92
23-23.9	.86	.76	.94
24-24.9	.90	.78	.96
25-25.9	.95	.80	.98
26-26.9	.99	.82	1.00
27-27.9	1.03	.84	1.02
28-28.9	1.07	.86	1.04
29-29.9	1.10	.88	1.06
30-30.9	1.14	.90	1.08
31-31.9	....	.92	1.10
32-32.9	....	.94	1.12
33-33.9	....	.96	1.14
34-34.9	....	.98	1.16
35-35.9	....	1.00	1.18
36-36.9	....	1.02	1.20
37-37.9	....	1.04	1.22
38-38.9	....	1.06	1.24
39-39.9	....	1.08	1.26
40-40.9	....	1.10	1.28

*Effective February 1, 1940.

Personal Paragraphs

T. R. JONES, president; M. O. MATTHEWS, vice president, and W. A. DELANEY, JR., chairman of the board of directors of the Louisiana-Nevada Transit Co., were in Okay, Ark., last week to see the first gas from the Cotton Valley field of North Louisiana move through the new line to the cement plant of the Ideal Portland Cement Co. at that place.

HARRY P. STOLZ, chairman, and WALTER D. ABEL, secretary-treasurer, and RICHARD PENCE, publicity chairman of the southern California section of the A.I.M.E., have completed plans for the institute's annual show which is staged once yearly to raise funds to maintain a scholarship fund for California student engineers.

G. C. BAKER, superintendent of the supply division for Caribbean Petroleum Co., is on a trip to Maracaibo, Venezuela.

HENRY ZWEIFEL, president, Cosden Petroleum Corp., Fort Worth, Tex., has been visiting New York and Chicago on business.

JOHN BROWN, president of Socony-Vacuum Oil Co., with offices in New York, is spending a vacation in southern California.

G. F. McNAIR, in the crude-oil purchasing department of Shell Oil Co., Inc., has been transferred from Tyler, Tex., to Corpus Christi, Tex.

W. H. CORREA, vice president of Socony-Vacuum Oil Co., Inc., New York, is on a cruise to Panama, accompanied by Mrs. Correa.

G. W. GORDON, president of Lago Oil & Transport Co. and general manager of foreign refinery operations for Standard Oil Co. of New Jersey, sailed from New York February 23 en route to Aruba.

MRS. PAUL GETTY, wife of PAUL GETTY, California independent producer and large holder of stock in Tide Water Associated Oil Co., is recovering from a fractured ankle suffered in Rome, Italy, recently.

R. P. MOSCRIP, Kansas divisional mechanical engineer for Shell Oil Co., Inc., with offices in Wichita, has been working in the Tulsa offices of the company for the past week on a special assignment but expects to return to Wichita before the end of this week.

CHARLES A. YEATMAN, who has been division engineer of Shell Oil Co., Inc., for the San Joaquin division, with offices in Bakersfield, has been appointed engineer of field engineering and survey and will in the future maintain offices at the Shell Building in Los Angeles.

CLARENCE HERBERT THAYER, technical assistant to the vice president of Sun Oil Co., and EUGENE HOUDRY, president of Houdry Process Corp., were among the "Modern Pioneer Awards" winners February 16 at Philadelphia. The event was arranged by the Philadelphia Chamber of Commerce and the National Association of Manufacturers, commemorating the 150th anniversary of the United States patent system.

JOHN E. BOGAN, national sales counselor for the Association of Gas Appliance and Equipment Manufacturers, spoke on promotion and plans for the "Certified Performance" gas ranges at a meeting sponsored by the Oklahoma Natural Gas Co. in Tulsa, February 26.

H. W. DODGE, Texas Co., New York, is chairman of the A.P.I. eastern regional marketing committee, which will represent Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, West Virginia, North Carolina, and South Carolina. T. M. MARTIN, Lion Oil Refining Co., El Dorado, Ark., is chairman of the southern regional committee representing Kentucky, Tennessee, Georgia, Florida, Alabama, Mississippi, Arkansas, Louisiana, and Texas. B. L. MAJEWSKI, Deep Rock Oil Corp., Chicago, Ill., has been appointed chairman of the central regional committee, which represents Ohio, Indiana, Illinois, Missouri, Oklahoma, Kansas, Nebraska, South Dakota, North Dakota, Minnesota, Iowa, Wisconsin, and Michigan. W. H. FERGUSON, Continental Oil Co., Denver, Colo., is chairman of the Rocky Mountain regional committee, which represents Montana, Wyoming, Colorado, New Mexico, Utah, and Idaho. R. K. DAVIES, Standard Oil Co. of California, San Francisco, Calif., is chairman of the Pacific Coast regional committee, representing Arizona, California, Nevada, Oregon, and Washington.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

Federal officials have been in Tulsa looking into the matter of the application of the Indian Territory Illuminating Oil Co. for a renewal of the blanket lease on 688,000 acres of Osage Indian land.

C. J. Wrightsman has sold the Susie Crow lease in the Cushing field, Oklahoma, for a reported $490,000.

20 YEARS AGO

Kansas, Oklahoma, and Texas crude was advanced 25 cents a barrel to $3.25 on February 27.

Magnolia Petroleum Co. made its first location in the Cement field, Oklahoma.

Armed guards were employed in the Wyoming fields last week to prevent claim jumping on the first night after release of lands under the national oil-land leasing bill signed by the president February 25.

10 YEARS AGO

A national survey shows there are 479 refiners in the United States with daily crude-oil capacity of 3,972,460 bbl., and that 186 cracking plants had a total daily capacity of 1,705,299 bbl.

John D. Rockefeller, Jr., refuting rumors that John D. Rockefeller, Sr., had directed the recent cut in crude-oil prices in the Mid-Continent, said his father has definitely retired from active management of affairs of the companies in which he is interested.

The proposed tariff on petroleum was defeated in the Senate by a vote of 27 to 39. Previously, Wirt Franklin had submitted records of the Independent Petroleum Association to the Senate lobby committee and testified before the committee for 2½ hours.

JACK R. MARTIN and S. W. EDMONDSON, of the Exchange Oil Co., have been transferred from Tulsa to Jackson, Miss.

H. O. SIVESS, superintendent of the Mount Pleasant, Tex., refinery of Talco Asphalt & Refining Co., was a Tulsa visitor over the week end.

JOHN PUGH, of Centralia, Ill., independent operator and president of the Independent Oil Producers Association of Illinois, was a recent business visitor in Tulsa.

JAY WHARTON, geologist and paleontologist for Phillips Petroleum Co. at Corpus Christi, Tex., has resigned and has moved to Lafayette, La., where he will be engaged in consulting work.

VESTER SMITH, senior partner of Smith Brothers Refining Co. of McLean, Tex., is in Johns Hopkins Hospital in Baltimore, Md., where he is recovering from a major operation performed there last week.

E. OBRING, regional geologist for Shell Oil Co., Inc., Tulsa, will deliver an address on "Salt Deposition of the Permian Seas" before the Panhandle Geological Society at its meeting Thursday evening, February 29, in Amarillo, Tex.

DR. F. D. ROSSINI, chief of the section on thermochemistry and constitution of petroleum of the National Bureau of Standards, will deliver a lecture to the Texas A. & M. section of the American Chemical Society Wednesday, March 13. The lecture topic will be "Hydrocarbons in Petroleum."

C. P. SCHAAFSMA, with the Shell interests in Netherland East Indies, was a recent visitor in Tulsa.

A. R. THOMPSON, Mattoon, Ill., oil operator and geologist, was in Tulsa and other Oklahoma points on business last week.

C. H. BERGQUIST, vice president of Kingwood Oil Co. of Centralia, Ill., is in charge of the new company office in Canton, Miss.

J. D. HAYNES, of El Dorado, Ark., has been placed in charge of operations for the Joe Modisett estate in Mississippi.

STANLEY GILL, consulting engineer of Houston, Tex., an authority on recycling, has been spending several days in South Arkansas fields.

GERALD WESTBY, president, Seismograph Service Corp., Tulsa, general chairman in charge of arrangements for the Southwest Aviation Conference in Tulsa, April 25-27, has appointed W. G. SKELLY, president, Skelly Oil Co.; W. G. GREEN, vice president, Seismograph Service Corp.; FRED Q. CASLER, president, Aero Exploration Co.; and FRED E. COOPER, Fred E. Cooper Co., on the executive committee.

WALTER L. FAUST, Socony-Vacuum Oil Co., Inc., New York; S. B. ECKERT, Sun Oil Co., Philadelphia, Pa.; L. T. KITTINGER, Shell Oil Co., Inc., New York; A. A. STAMBAUGH, Standard Oil Co. (Ohio), Cleveland, Ohio; E. S. HALL, Standard Oil Co. of New Jersey, New York; HARRY T. KLEIN, Texas Co., New York, and ROY T. OSBORN, Sinclair Refining Co., New York, have been added to the membership of the American Petroleum Institute marketing program committee.

Wasn't Fussy About It

D. H. Bolin, new president of the North Texas Oil and Gas Association, may have felt a bit out of place for a while when he quit a banking job to take one as a "nipple chaser," or driver of an oil-field pickup truck at Strawn, Tex.; but he had made up his mind to get into the oil business, and he wasn't fussy about the way he did it. In less than a year he was operating a machine shop and fishing tools at Graham, Tex., and there he became a drilling contractor. After 10 years in Graham he moved in 1932 to Wichita Falls, Tex., where he is an independent producer and a drilling contractor in the firm Bolin & Lindsay. With the Deep Oil Development Co. he opened the Chalk Hill field.

D. H. BOLIN

Mr. Bolin was born in Naples, Tex. He graduated from high school and from the junior college in Stamford, Tex. He enlisted for World War service, failed to get oversea, and was a second lieutenant when mustered out. Jobs in banks at San Angelo, Strawn, and Sweetwater, Tex., provided a living for 3 years. Then he abandoned his white collar and mounted the pickup truck.

For more than 20 years Mr. Bolin has been deeply interested in Boy Scout work, and he is a leader in civic activities in Wichita Falls. He was president of the city's Chamber of Commerce in 1938, headed the community chest in 1935 and 1936, and he is called upon for important committee work. He likes to fish and bowl when there is time for fun.

PRES. W. K. WARREN, of Warren Petroleum Corp., Tulsa, and Mrs. Warren have returned from a month's vacation at Miami Beach.

W. H. SEALS, new assistant geologist with Tide Water Associated Oil Co. in the Shreveport, La., office, was recently transferred from the company's Midland, Tex., office.

ROGER HUTCHINS, of the public relations department, American Petroleum Institute, New York, has been on Institute business in Texas and Oklahoma oil centers.

OLIN CULBERSON, formerly chief of the Gas Utilities Division of the Texas Railroad Commission, has announced his intention of becoming a candidate for commissioner.

DANA H. KELSEY, vice president, Sinclair Prairie Oil Co., and Mrs. Kelsey have returned from a visit to Harlingen, Tex., where they attended the 102d birthday of Mr. Kelsey's father.

C. C. BENZ, former chief engineer at Long Beach, Calif., has been made superintendent of the Norphlet, Ark., refinery of the MacMillan Petroleum Corp. He succeeds L. L. REBBER, who has been transferred to the California refinery.

A. F. WINN, traffic manager of Skelly Oil Co. and head of the transportation division of the International Petroleum Exposition, was in charge of a luncheon conference at the Mayo Hotel, Tulsa, Tuesday of this week, devoted to discussion of transportation arrangements made by various railroads for the oil show to be held next May. Officials of the exposition and a large delegation of railroad men were guests.

Shifts: J. E. HEAD, Rex Pipe Line Co., from Evansville, Ind., to Centralia, Ill.; W. E. JOOR, JR., engineer, Petroleum Conversion Corp., from Elizabeth, N. J., to Roselle, N. J.; J. J. McAULAY, purchasing agent, Oklahoma Pipe Line Co., from Tulsa to St. Elmo, Ill.; JAMES F. GUMP, engineer, W. G. Hanrahan, from Eunice, N. M., to Dallas, Tex.; J. A. LEE, superintendent, Humble Oil & Refining Co., from Bloomington, Tex., to Conroe, Tex.; C. A. URICE, Fain Drilling Co., from Elk City, Okla., to Hobart, Okla.; EUGENE W. GILL, engineer, Phillips Petroleum Co., from Guthrie, Okla., to Okmulgee, Okla.; BOB O. BIRD, superintendent, Phillips Petroleum Co., from Guthrie, Okla., to Vernon, Tex.; RALPH W. COLLINS, engineer, Stanolind Oil & Gas Co., from Loyd, Colo., to Casper, Wyo. WILLIAM L. RUSSELL, geologist, Michigan-Devonian Petroleum Co., from Capetown, South Africa, to Macomb, Ill.; C. K. JORDAN, engineer, Continental Oil Co., from Canton, Miss., to Forest, Miss.; ROBERT I. GARDNER, engineer, Richfield Oil Co., from Long Beach, Calif., to Taft, Calif.; JAMES A. DAVIS, vice president, Empire Southern Gas Co., from Big Spring, Tex., to Alexandria, La.; VICK E. BAUM, superintendent, Ryan Consolidated Petroleum Corp., from Dallas, Tex., to Pampa, Tex.; J. D. TOMPKINS, president, Acme Oil & Royalty Co., from San Antonio, Tex., to Midland, Tex.; J. F. HYATT, president, Hyatt Oil & Gas Co., from Chicago, Ill., to Whiting, Kans.; M. H. HESS, Hudson-Hess Drilling Co., from Fairfield, Ill., to Mount Vernon, Ill.; C. L. WHITEMAN, engineer, Indian Refining Co., from Lawrenceville, Ill., to Greenwoood, Miss.; ART RAY, superintendent, Gulf Refining Co., from Indianapolis, Ind. to Tulsa.

J. M. (JACK) LOFFLAND, Loffland Brothers Drilling Co., accompanied by Mrs. Loffland, returned to their home in Fort Worth, Tex., last week after having spent 3 weeks in Florida and Havana.

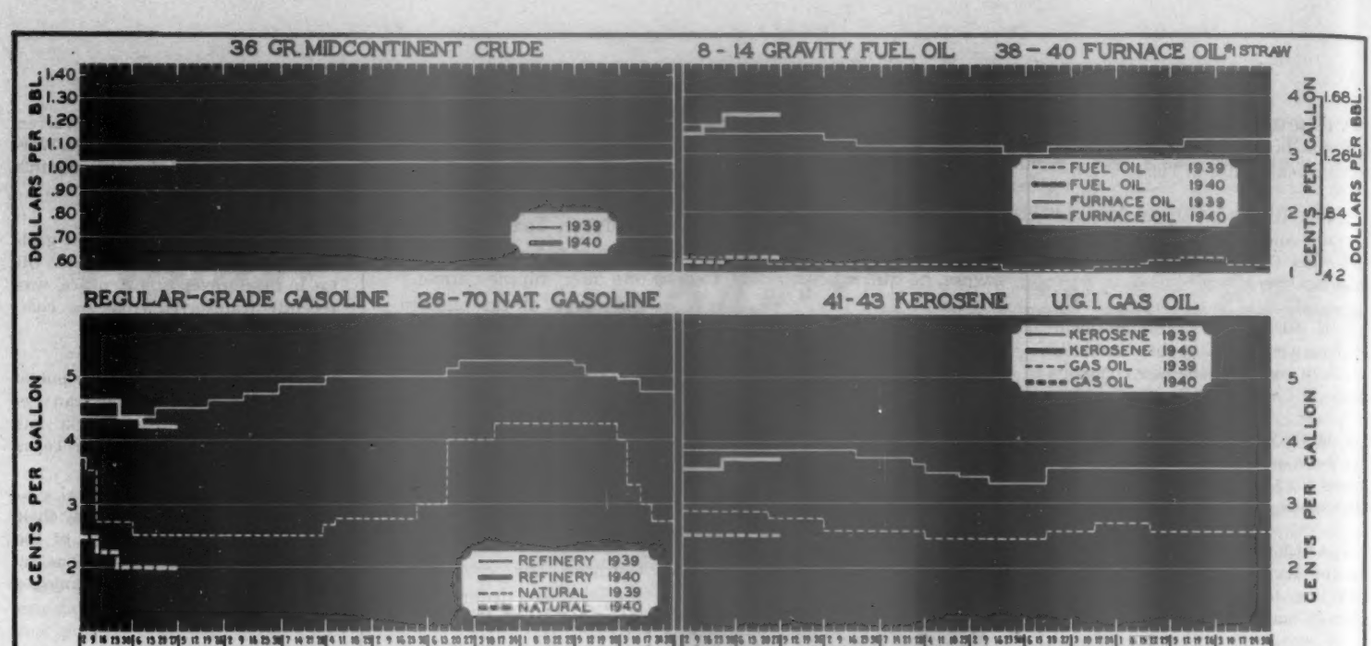
CLYDE WHITE, chief civil engineer for Pure Oil Co., Fort Worth, Tex., will be transferred March 1 to the company's district offices at Saginaw, Mich. He will be replaced by R. R. REID, who will be transferred to Fort Worth from the company's engineering offices in Olney, Ill.

W. H. O'CONNOR, director of purchases, Continental Oil Co., Ponca City, Okla., was reported in a serious condition in a Baltimore hospital, where he went for treatment several weeks ago. Mrs. O'Connor was said to have left Ponca City last Friday to go to his bedside.

H. B. FELL, executive vice president of the Independent Petroleum Association of America, will be the principal speaker at the second anniversary of the discovery of the Magnolia field March 5.

J. A. WELCH, vice president and general sales manager of the Arkansas Fuel Oil Co., Shreveport, La., presided at a company conference of representatives of Petroleum Advisers, Inc., in Shreveport.

RALPH B. ROARK, vice president in charge of Kansas-Oklahoma-Panhandle operations for Shell Oil Co., Inc., announced last week that REID W. BOND, manager of production, has been given a 2 months' leave of absence for a trip to Venezuela, where he will look over the operations of Venezuelan Oil Corp. and other Shell subsidiaries and return to Tulsa in May. During his absence his duties will be handled by W. H. MORRISON, special assistant to the production manager, as acting manager of production. GEOFFREY H. STOKES, who has been assistant to the vice president in Tulsa for 3 years, will become assistant to A. J. GALLOWAY, vice president in charge of exploratory work, at St. Louis. C. M. D. PETERS, who has been assistant manager of the Illinois operations at Centralia, is to remove to Tulsa as assistant to the vice president.



Representative Mid-Continent Quotations on Crude Oil and Refined Products, Basis Oklahoma (Group 3)

New High in Gasoline Stocks Causes Uneasiness in Group 3 Market

By T. F. SMILEY

WITH the country's gasoline stocks recording an all-time high and no signs of any development calculated to bring supplies into balance with requirements, the Group 3 market evinced uneasiness this week. Here and there an unflagging optimist said the danger embodied in the present huge inventories was being overemphasized. A more common view was that pooh-poohing their threatening character was a form of whistling in the dark.

Total stocks of 93,985,000 bbl. in the week ending February 17 passed the previous high mark, established March 25, 1938, by 1,673,000 bbl. Their gain over the preceding week was 2,336,000 bbl., or 2.6 per cent. Additions to stocks in the Mid-Continent area totaled 490,000 bbl., a gain of 4.5 per cent. Mid-Continent inventories thus continued their recent performance of increasing faster than those of the country as a whole.

"If He Wants to Lose, Let Him"

One market analyst whose opinions receive attention because of his faculty of getting at the core of a situation declared the immense volume of gasoline in storage did not in itself constitute a market threat. "It represents about 90 days' supply," he said. "It's silly to call that something that must demoralize the market. The whole industry, from refiner to service-station operator, could start tomorrow morning charging 2 cents a gallon more for gasoline, and the public, knowing it was paying a fair price, would not complain. This thing of blaming big gasoline stocks for unprofitable operation of refineries is plain apple sauce. It is just an alibi for wretched market practices. Let the refiner who wants to take business at a loss have it. He'll go under eventually. And let refiners who are in business to make a reasonable profit stand by and see the price cutter go to an early grave."

"But," he was reminded, "whether the existing big stocks should upset the market or not, they are doing it. In the light of market history and of the fact that we have some 11,000,000 bbl. more of gasoline than the economists say we should have, do you foresee a profitable summer business?"

"No."

In spite of bulging storage tanks, refiners were reported to be less willing to grant concessions this week, lending the market an outward appearance at least of slightly better health. The reluctance to shade quotations was attributed largely to hopes that rising spring consumption would mitigate a troublous problem by drawing on burdensome stocks. In the meantime an increasing number of refiners said they would have to close their plants unless relief came soon.

Hard Week for Naturals

Natural gasoline passed through another hard week. Since refiners on the Gulf Coast and neighboring areas to the north are meeting extreme difficulty in finding outlets for their finished motor fuel, the movement of casing-head in that direction is limited. It is recognized, however, that distress stocks of gasoline will have to go eventually at some price and that when they do there will be a call for natural. Weakness of the naturals centered in Texas. The interior market in Oklahoma was active, but tops of quotations were fixed by freight differentials that mark the point of competition with the Texas product. One sale of 26-70 in Oklahoma last week for intrastate shipment was reported at 2¼ cents.

Several export inquiries for part cargoes of natural were received during the week, the first in a long time. They were said to have come from countries involved in the European war.

Wax quotations sagged a little, but a pickup in orders followed the lower prices. Lubricating oils were holding well, in contrast with the increasing softness of this division in the East. Buyers of bright stocks were asking prompt shipment.

Heating oils were showing the result of milder weather in northern areas. Offerings were more plentiful, but no really unwieldy inventories were apparent. Kerosene was steady. Heavy industrial fuel was less active. Reversing their trend, Mid-Continent stocks rose 16,000 bbl.

Refined Oil Market Barometer

Soaring stocks of gasoline tending to neutralize the favorable market influence of slightly expanding demand. Heating oils retaining their strength in the East, where low temperatures persist, but easier in other areas. Lubricating oils softer in the East, but holding well in the Mid-Continent. Weakness of naturals continues. Heavy industrial fuel less active.

MID-CONTINENT. Gasoline unsteady. Demand for heating oil less urgent. Naturals weak.

EAST COAST. Heating oils tight. Kerosene scarce. Heavy fuels firm.

GULF COAST. Gasoline still weak. Heavy fuel and burning oils easier. Kerosene firm.

PENNSYLVANIA. Gasoline weak. Neutrals off, but bright stocks slightly steadier.

CALIFORNIA. Gasoline soft. Market disturbed by two sets of crude schedules.

CHICAGO. Gasoline shows mild improvement. Heavy fuels easier. Heating oils firm.

Fuel-Oil Market Still Tight in East Despite Weather

By H. STANLEY NORMAN

NEW YORK, Feb. 27.—Despite a moderation in northeastern weather conditions, the fuel-oil market remains extremely tight and prices are firm to higher on all grades. Several suppliers still posting an open-market price for some grades of fuel oil are frank to admit that they cannot make delivery at the moment against other than contract-customer instructions.

Quotations are being continued because of the certainty that conditions will change within a few weeks and that identification with open-market postings will maintain contact with this type of business.

Fuel-oil deliveries are rigidly restricted even to contract customers. Most suppliers are holding a little surplus fuel oil in reserve to accommodate particularly promising industrial accounts, but commitments are not being extended to cover forward delivery. Rather, the limited fuel-oil stocks not already "earmarked" are used sparingly in the attitude of "helping out" some particularly desperate potential contract customer.

Standard Oil Co. of New Jersey's New York fuel-oil department has withdrawn its open-market quotations. No material is available for delivery in this market and consequently the company has taken the attitude that it is useless to imply any other position by continuing open-market quotations.

Kerosene is particularly scarce in the New York market, probably because of demand for this fuel in space heaters during the protracted and subnormally cold winter existing so far throughout the northeastern territory. Quotations continue at 5.6 cents per gallon, but most open-market sales are actually made at 6 cents per gallon in the area from Philadelphia to Boston for the reason that most suppliers are not in position to make delivery.

Scarcity of kerosene was also reported from the western Pennsylvania and Gulf Coast refinery districts. Prices stiffened at both sources. Pennsylvania refiners were asking from 5¼ to 5½ cents per gallon for kerosene in tank cars, and Gulf Coast suppliers are quoting from 4½ to 4⅝ cents in cargo quantities.

The interrefinery exchange of fuel-oil stocks to meet emergencies is not only continuing but has been expanded in this particular section of the country. There have been no reported cases of actual inability to supply at least a part of contract-customers' demands, but to do so has recently involved exchanges of stocks, outright purchases or loans of materials between refiners.

The demand for No. 2 and No. 4 grades of fuel oil is hardly less acute than for kerosene. Most of the restrictions applicable to kerosene apply to the medium grades of light fuel and, for that matter, extend over Bunker C material. The tank-car quotation for No. 2 fuel oil in New York is 5.1 cents per gallon, but the strictly limited open-market sales are uniformly at 5¼ cents. The top contract price for No. 2 fuel oil in tank cars—a price established during the off season (summer) of 1939—is 4¾ cents.

Gulf Coast refiners are asking 4¼ cents per gallon for No. 2 fuel oil in cargo quantities, but supplies are extremely difficult to locate by open-market buyers. The strain to supply contract fuel-oil customers has backed up on Gulf Coast refiners who are limiting distributors. The restrictions imposed by refiners on light-fuel-oil deliveries have recently involved compulsory acceptance of motor fuel.

Bunker C fuel oil is offered sparingly at principal North Atlantic terminals at $1.50 per barrel. Suppliers are not soliciting open-market business on an active scale but are attempting to fill such open-market orders as voluntarily appear.

Cargo quotations for Bunker C fuel oil on the Gulf Coast range from $1 to $1.05 per barrel. Heavy marine oil for ship's bunkers ranges from 90 cents to $1.05, with a majority of the business around $1 per barrel.

There has been no reported change in Gulf Coast cargo-gasoline quotations, but in the absence of sales it is difficult to determine the real foundation. Regular gasoline is quoted at a range of 5¾ to 6¼ cents, while the inferior grades can be had at 5¼ cents or lower, depending upon conditions of sale.

Tank-car and tank-wagon gasoline prices were dropped a half cent per gallon in the Standard Oil Co. of Louisiana territory, effective February 19. This reduction was considered by some observers as the first impact of the Gulf Coast motor-fuel-market weakening caused by stocks backing up into the hands of weaker refiners.

There has been no change of outstanding importance in the northeast. One supplier in the Philadelphia area elevated his tank-car price on regular motor fuel from 6¼ to 6½ cents, but in doing so merely met the most generally quoted price for similar material. The change was predicated on abandonment of a 65-octane-and-over specification basis in favor of a new classification of 72-74 octane. A few scattered New York distributors are offering 72-74-octane (leaded) gasoline at 6½ cents, but a majority of sellers quote 6¾ cents up to a top of 7.7 cents.

Pennsylvania refiners were unable to halt the decline in lubricating-oil prices, an indication that appeared in the preceding week. Consequently, cylinder stocks tapered off 1 to 2 cents per gallon. Bright stock of 25 pour test is offered by most refiners at 25 cents per gallon, which is a new low for the year. Current prices are off 5 to 7 cents from the highs set in November and December last year. A revival of export buying which gave some indication of developing in the third week of February has not materialized, although some refiners say the movement was simply delayed, rather than abandoned.

Lubricating-oil manufacturers are basing their future market hopes on the many recent forecasts of a strong upswing this spring and summer in general business activity. The heavy demand for lube stocks during the final quarter of 1939 may prove to have been one of the first signs of general business activity. In the past most general-business changes can be closely correlated with a forerunning upswing in the demand for lubricating oil.

A. P. I. Weekly Refinery Statistics

Week Ended February 24, 1940

	Capacity reporting (per cent)	Daily crude runs (bbl.)	Total gasoline stocks (bbl.)	Gas oil and distillate stocks (bbl.)	Residual fuel-oil stocks (bbl.)
East Coast	100.0	551,000	19,378,000	6,797,000	7,492,000
Appalachian	87.3	128,000	3,924,000	400,000	628,000
Ind., Ill., and Ky.	90.7	555,000	16,025,000	2,748,000	2,682,000
Okla., Kans., and Mo.	81.6	252,000	8,736,000	1,099,000	1,946,000
Inland Texas	50.3	119,000	2,052,000	280,000	1,487,000
Texas Gulf	90.0	825,000	16,298,000	3,303,000	5,856,000
Louisiana Gulf	97.8	134,000	3,223,000	688,000	1,190,000
N. Louisiana and Ark.	55.0	51,000	726,000	229,000	460,000
Rocky Mountains	54.2	41,000	1,661,000	159,000	490,000
California	90.0	470,000	17,966,000	9,002,000	79,168,000
Total reported	86.4	3,126,000	89,989,000	24,705,000	101,399,000
Est. unreported	.....	364,000	6,730,000	685,000	2,020,000
*Est. total	.....	3,490,000	96,719,000	25,390,000	103,419,000
*Est. total previous wk.	.....	3,570,000	93,985,000	25,876,000	103,424,000
*Feb. 25, 1939	.....	3,185,000	84,245,000	29,466,000	113,353,000

*Bureau of Mines.

Stocks of Crude Oil in the United States

(BUREAU OF MINES ESTIMATE)

Week ended February 17, 1940	238,928,000 barrels
Week ended February 10, 1940	239,510,000 barrels
Week ended February 18, 1939	272,052,000 barrels

Figures do not include stocks of heavy, unrefinable California crude.

Gulf Coast Markets

HOUSTON, Tex., Feb. 27.—The tight market in heavy fuel and burning oils, prevailing on the Gulf Coast since early last fall, showed signs of easing up as a slight decrease in quotations was reported. This material, commanding from 97 cents to $1.05 during the past few months, is quoted at 97 cents to $1. Movement is held up some by lack of tankers. Shipments are largely coastwise.

The gasoline situation was unimproved although there were indications that some refineries were attempting to do something about lowering gasoline stocks, which have been increasing for the past several weeks. One of the larger independent refineries, located at Corpus Christi, was shut down temporarily and several others in the district were reported to be operating on reduced runs.

Kerosene continued in good demand, with the price firm at 4½ cents. Lubricating oil was steady.

Retail Oil Markets

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of February 27, 1940

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county, and city taxes. The gasoline is the regular or standard grade. In most areas lower grades and a premium grade also are available.

Standard Oil Co. (Indiana)

	Gasoline			Kero.
	Tank wag.	Dlr.	Incl. tax	tank wag.
Chicago, Ill.	15.1	13.1	4.0	10.0
Decatur	15.1	12.1	4.0	8.5
Joliet	15.1	13.6	4.0	10.0
Peoria	15.1	12.7	4.0	10.0
Quincy	14.9	13.4	4.0	9.8
Davenport, Ia.	15.1	13.6	4.0	‡10.0
Des Moines	14.9	12.4	4.0	‡9.8
Mason City	15.3	13.8	4.0	‡10.2
Duluth, Minn.	16.9	15.4	5.0	10.8
Mankato	16.5	15.0	5.0	10.4
Minneapolis	16.5	14.5	5.0	10.4
LaCrosse, Wis.	16.5	15.0	5.0	10.4
Green Bay	16.9	15.4	5.0	10.0
Milwaukee	16.3	14.8	5.0	10.2
Detroit, Mich.	13.6	12.1	4.0	7.6
Grand Rapids	13.2	11.3	4.0	9.7
Saginaw	14.8	13.3	4.0	9.3
Evansville, Ind.	16.6	15.1	5.0	†10.5
Indianapolis	16.8	14.3	5.0	†10.0
South Bend	16.8	15.3	5.0	†10.0
Fargo, N. D.	17.7	16.2	5.0	11.6
Huron, S. D.	17.0	15.5	5.0	10.9
Kans. City, Mo.*	14.4	12.9	4.0	8.0
St. Louis*	14.7	13.2	4.0	8.0
St. Joseph	14.4	12.0	4.0	7.9
Wichita, Kans.	13.3	11.1	4.0	7.0

*State tax 2 cents, 1-cent city tax, and 1-cent federal tax. †Does not include 4-cent state tax. ‡Does not include 3-cent state tax.

Exclusive of state general sales taxes.

Discounts to commercial consumers: On purchases per month off tank-wagon prices: 1,000 gal. or more, 1.5 cents off; minimum delivery 25 gal.

Stanolex Fuel Oil in Chicago

Effective December 12, 1939, f.o.b. Chicago tank-wagon prices: Standard heater oil, 1-99 gal., 9 cents; 100-149 gal., 8 cents; 150 gal. and over, 7.5 cents. Stanolex fuel oil No. 1, 1-149 gal., 8.25 cents; 150-399 gal., 7.25 cents; 400 gal. and over, 6.75 cents. Stanolex furnace oil, 1-149 gal., 8.25 cents; 150-399 gal., 7.25 cents; 400 gal. and over, 6.75 cents. Stanolex Grade A, 1-399 gal., 5.5 cents; 400 gal. and over, 4.5 cents. Stanolex Grade B, 1-799 gal., 5.25 cents; 800 gal. and over, 4.25 cents. Stanolex Grade C, 1-999 gal., 4.5 cents; 1,000 gal. and over, 3.5 cents.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline			Kero.
	Cons'r tank wag.	Di-vided dlr.	Incl. tax	tank wag.
Ohio points	15.5	14.5	5.0	*13.0

*Includes state tax of 1 cent.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline			Kero.
	Cons'r tank car	Dlr. tank wag.	Incl. tax	tank wag.
Atl'tic City, N. J.	11.6	12.7	4.0	8.1
Newark	11.6	12.7	4.0	8.1
Annapolis, Md.	13.35	14.35	5.0	9.5
Baltimore	12.75	13.75	5.0	7.5
Cumberland	14.15	16.15	5.0	10.0
Wash'gton, D. C.	11.00	12.0	3.0	9.5
Danville, Va.	14.95	17.45	6.0	11.5
Norfolk	13.75	16.25	6.0	11.0
Petersburg	14.05	16.55	6.0	11.7
Richmond	14.05	16.55	6.0	11.0
Roanoke	15.25	17.75	6.0	11.5
Charles'n, W. Va.	14.55	17.05	6.0	12.6
Parkersburg	13.85	15.35	6.0	11.2
Wheeling	14.85	16.75	6.0	12.2
Charlotte, N. C.	16.90	18.40	7.0	11.8
Hickory	17.45	18.95	7.0	12.3
Mt. Airy	17.30	18.80	7.0	12.2
Raleigh	16.65	18.15	7.0	11.5
Salisbury	16.95	18.45	7.0	11.9
Charleston, S. C.	14.75	17.25	7.0	9.25
Columbia	15.60	18.10	7.0	11.5
Spartanburg	16.30	18.80	7.0	12.2

Price basis to Essolene undivided dealers: Dealer tank-wagon price less 0.5 cent per gallon. Price basis to commercial consumers, effective March 8, 1937, in Maryand, District of Columbia, and in Arlington and Fairfax counties in Virginia; and March 12 in New Jersey: To contract accounts purchasing at least one full compartment at time by hose connection, on yearly purchases: From 2,500 to 100,000 gal., consumer tank-wagon price at time and place of delivery; 100,000 gal. per year, consumer tank-car price plus 0.5 cent per gallon. Consumer tank-wagon price generally will be equivalent to dealer tank-wagon price less 0.5 cent per gallon.

Effective January 16, 1939, in North Carolina the commercial consumer schedule became as follows: Single deliveries of 50 gal. or more, consumer tank-wagon price. Single deliveries of less than 50 gal., 4 cents per gallon over consumer tank-wagon price. Generally the posted consumer tank-wagon price will be equivalent to the dealer price, less 0.5 cent per gallon. The above policy also applies in South Carolina, effective January 23, 1939.

Discounts for kerosene, 1 cent off tank-wagon price for 25 gal. or more under contract (contract not necessary in Baltimore), except no discount in New Jersey.

Southern District

STANDARD OIL CO. (KENTUCKY)

	Gasoline			Kero.
	Cons'r tank wag.	Net dlr.	Incl. tax	tank wag.
Atlanta, Ga.	17.0	17.0	7.0	10.0
Augusta	17.5	17.5	7.0	10.0
Macon	16.5	16.5	7.0	10.5
Savannah	16.5	16.5	7.0	9.0
Birmingham, Ala.	18.5	18.5	8.0	9.0
Mobile	18.5	18.5	9.0	8.0
Montgomery	19.5	19.5	9.0	11.0
Jackson, Miss.	16.0	16.0	7.0	10.0
Vicksburg	16.5	16.5	7.0	9.5
Jacksonville, Fla.	17.0	17.0	8.0	8.0
Miami	17.0	17.0	8.0	8.0
Pensacola	18.5	18.5	9.0	8.5
*Tampa	21.0	18.0	8.0	8.0
Lexington, Ky.	16.5	16.5	6.0	10.0
Covington	15.0	15.0	6.0	9.5
Louisville	15.5	15.5	6.0	9.0
Paducah	15.5	15.5	6.0	9.0

Price basis to tank-wagon consumers, effective January 4, 1937, 3 cents per gallon below tank-wagon price.

Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon; Pensacola, Fla., has a city gasoline tax of 1 cent. All are included in the table.

*Temporary discounts te tank-wagon consumers in Tampa 3 cents per gallon below consumer tank-wagon price on Crown gasoline.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline			Kero.
	Cons'r tank car	Dlr. tank wag.	Incl. tax	tank wag.
Albany	12.6	14.2	5.0	8.3
*Met. N. Y.: Manhat., Bronx, Queens, Brklyn., Staten Island	12.7	13.7	5.0	8.5
Buffalo	13.1	14.5	5.0	7.9
Rochester	13.3	15.0	5.0	8.5
Syracuse	13.2	14.5	5.0	8.8
Portland, Me.	12.6	14.4	5.0	8.5
Manchester, N.H.	13.3	15.3	5.0	8.9
Burlington, Vt.	13.1	15.4	5.0	8.7
Boston, Mass.	11.5	13.0	4.0	8.5
Worcester	12.1	13.5	4.0	8.0
Hartford, Conn.	11.9	13.3	4.0	8.4
New Haven	11.8	12.8	4.0	7.5
Providence, R. I.	11.5	13.3	4.0	8.5

*Does not include 2 per cent city sales tax, which is calculated on basis of net retail price exclusive of state and federal taxes. Metropolitan New York prices are undivided dealer prices; others are split dealer.

Effective February 15, 1939, the company changed its commercial consumer policy in New York and in New England points for tank-wagon delivery to the following: Annual purchases 10,000 gal. and under, tank-car price plus 2 cents per gallon; annual purchases 10,000 gal. up to 50,000 gal., tank-car price plus 1.5 cents per gallon; annual purchases 50,000 to 200,000 gal., tank-car price plus 1 cent per gallon; annual purchases 200,000 gal. and over, tank-car price plus ½ cent per gallon. Private consumers pay undivided dealer price, plus 2 cents per gallon. Private consumers receiving full compartment deliveries of at least 200 gal. receive a discount of ½ cent per gallon.

Pennsylvania and Delaware

ATLANTIC REFINING CO.

	Gasoline			Kero.
	Cons'r tank car	Dlr. tank wag.	Incl. tax	tank wag.
Philadelphia, Pa.	12.5	14.0	5.0	10.0
Pittsburgh	13.0	14.5	5.0	10.5
Allentown	13.0	14.5	5.0	10.5
Erie	13.0	14.5	5.0	10.0
Scranton*	12.5	15.0	5.0	10.5
Altoona	13.0	15.0	5.0	10.5
Dover, Del.	...	13.5	5.0	10.5
Wilmington	...	14.0	5.0	10.0

Price basis to undivided dealers, dealer tank-wagon price less 0.5 cent per gallon.

Discount on kerosene, 2 cents per gallon off tank-wagon price on tank-wagon deliveries of 25 gal. or more at one time.

*Voluntary discount of 1 cent allowed to dealers only.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline			Kero.
	Tank truck	Serv. sta.	Incl. tax	tank wag.
San Francisco	17.5	18.5	4.0	11.5
Los Angeles	17.0	18.0	4.0	10.0
Fresno, Calif.	18.5	19.5	4.0	12.5
Phoenix, Ariz.	20.0	21.0	6.0	*17.5
Reno, Nev.	20.5	21.5	5.0	13.5
Portland, Ore.	20.0	21.0	6.0	13.5
Seattle, Wash.	20.0	21.0	6.0	†13.75
Spokane	21.5	22.5	6.0	†16.75
Tacoma	20.0	21.0	6.0	†13.75

*Includes 5-cent state tax. †Includes 0.25-cent state tax.

Discounts to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents. To commercial consumers: On tank-wagon price; on single deliveries of 40 gal. and over, advance quantity discount extended at time of delivery, 3 cents. Service-station schedule applies on single deliveries less than 40 gal. On kerosene in tank-car, transport-truck, and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank wagon.

March 18, 1939, split dealer discount was canceled.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline			Kero.
	Tank wag.	Dlr.	Incl. tax	tank wag.
Denver, Colo.	14.0	...	5.0	11.5
Grand Junction	17.5	...	5.0	15.0
Pueblo	15.0	...	5.0	9.0
Casper, Wyo.	16.5	...	5.0	11.5
Cheyenne	15.5	...	5.0	13.0
Billings, Mont.	18.5	...	6.0	13.0
Butte	20.0	...	6.0	15.5
Great Falls	19.5	...	6.0	15.5
Helena	20.5	...	6.0	15.5
Salt Lake, Utah	15.5	15.5	5.0	16.0
Boise, Idaho	21.1	21.1	6.0	18.0
Twin Falls	21.1	21.1	6.0	18.0
Albu'que, N. M.	14.5	...	6.5	10.0
Roswell	16.0	16.0	6.5	8.0
Santa Fe	17.5	17.5	6.5	10.0

*Includes city tax of 0.5 cent. †Includes state tax of 1 mill.

Tank wagon represents price to consumers. Dealer represents price to dealers. If no dealer price is quoted, the tank-wagon price applies to all classes of trade.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline			Kero.
	Cons'r tank car	Dlr. tank wag.	Incl. tax	tank wag.
New Orleans, La.	14.75	17.25	8.0	†11.0
Baton Rouge	14.75	17.25	8.0	‡10.5
Alexandria	14.75	17.25	8.0	‡10.5
Lafayette	15.00	17.50	8.0	‡11.0
Lake Charles	14.75	17.25	8.0	‡12.5
Shreveport	13.50	16.00	8.0	‡9.0
Knoxville, Tenn.	18.00	20.50	8.0	13.0
Memphis	16.00	18.50	8.0	11.0
Chattanooga	17.50	20.00	8.0	12.0
Nashville	17.00	17.50	8.0	11.0
Bristol	18.25	17.75	8.0	13.0

Essolene at dealer price less 0.5 cent per gallon to undivided dealers.

†Includes 1-cent parish tax and 1-cent state tax. ‡Includes 1-cent state tax.

Price basis to commercial consumers: Effective May 15, 1937, deliveries of 50 gal. or more in one territory take posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gal. at one time pay posted consumer tank-wagon price plus 4 cents per gallon. Generally, the posted consumer tank-wagon price will be equivalent to the dealer price less 0.5 cent per gallon. Kerosene prices include 1-cent state tax.

Effective February 24, 1939, the company reestablished in New Orleans the commercial consumer policy on motor fuel effective in the rest of the state.

Effective December 12, 1938, the company revised its commercial consumer policy on motor fuel in New Orleans, as follows: Single deliveries of less than 50 gal., consumer tank car plus 2 cents per gallon 50 to 199 gal., consumer tank car plus 1 cent per gallon; 200 gal. and over, consumer tank car plus 0.5 cent per gallon.

Oklahoma and Arkansas

CONTINENTAL OIL CO.

	Gasoline			Kero.
	Tank wag.	Dlr.	Incl. tax	tank wag.
Texarkana, Ark..	13.0	...	5.0	7.0
Fort Smith	14.5	...	5.0	7.5
Little Rock	17.25	...	7.5	8.0
Muskogee, Okla.	13.0	12.0	5.0	7.0
Oklahoma City	11.0	...	5.0	6.5
Tulsa	11.0	...	5.0	7.0

Tank wagon represents price to consumers. Dealer represents price to dealers. If no dealer price is quoted, the tank-wagon price applies to all classes of trade.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline			Kero.
	Tank wag.	Dlr.	Incl. tax	tank wag.
Omaha	16.5	12.9	6.0	9.8
McCook	16.5	13.9	6.0	9.0
Norfolk	16.5	14.4	6.0	9.5
North Platte	17.8	14.9	6.0	10.0
Scottsbluff	18.5	15.5	6.0	10.0

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective January 1, 1935.

Texas

	Gasoline			Kero.
	Tank wag.	Dlr.	Incl. tax	tank wag.
Dallas, Tex.	12.0	16.0	5.0	7.0
Fort Worth	12.0	16.0	5.0	8.0
Houston	13.5	17.5	5.0	7.0
San Antonio	13.0	17.5	5.0	8.0

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank wagon*
Oleum spirits	16.2
V.M.&P. naphtha	16.5
Cleaners' naphtha	15.5
Stanisol	15.5

*Prices include 3-cent Illinois tax but not 1-cent federal tax nor 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150-gal. lots if covered by contract.

Canada*

3-Star Imperial Gasoline
IMPERIAL OIL, LTD.

	Tank wag.	Incl. tax	Kero. tank wag.
Halifax, N. S.	25.0	10.0	19.0
St. John, N. B.	25.0	10.0	19.0
Montreal, Que.	24.0	8.0	16.5
Toronto, Ont.	23.5	8.0	16.0
Hamilton, Ont.	23.5	8.0	16.0
Winnipeg, Man.	26.5	7.0	20.5
Brandon, Man.	28.0	7.0	22.9
Regina, Sask.	25.5	7.0	20.5
Saskatoon, Sask.	28.0	7.0	23.0
Edmonton, Alta.	25.9	7.0	20.9
Calgary, Alta.	23.0	7.0	18.0
Vancouver, B. C.	23.0	7.0	23.0

*Imperial gallon used in Canada.

Divided dealers pay tank-wagon prices. Discount to undivided dealers, 1 cent below tank-wagon price. In maritime provinces both divided and undivided dealers pay tank-wagon price.

Tank-Wagon Changes

Standard Oil Co. (Indiana) February 1 reduced dealer gasoline 0.4 cent in Grand Rapids; February 5, reduced tank-wagon gasoline 0.7 cent in Grand Rapids.

Standard Oil Co. of Louisiana February 19 reduced consumer tank-car and dealer tank-wagon gasoline 0.5 cent generally in Louisiana and Arkansas.

Correction: The price of 28-30 diesel oil at New York (Bayonne, N. J.) in issues of January 18 and 25 should have read $2.10 to $2.20 instead of $1.70 as was shown. The price of $1.70 was that prevailing for marine diesel oil on the Gulf Coast.

Atlantic Refining Co. February 10 advanced tank-wagon kerosene 0.25 cent in Wilmington.

Prices of Refined Products

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of February 27, 1940

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents a gallon on lubricating oils.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
62 octane and below	.03¼	.03⅜
63-66 octane	.03¾	.03⅞
67-69 octane	.04	.04¼
70-72 octane (regular)	.04¼	.04⅜
60-62 400 grades:		
62 octane and below	.03¼	.03⅜
63-66 octane	.03¾	.03⅞
67-69 octane	.04	.04¼
70-72 octane (regular)	.04¼	.04⅜
68-70 360	.04½	.04¾

NORTH TEXAS—

U. S. Motor grades:		
62 octane and below	.03⅜	.03⅝
63-66 octane	.03¾	.03⅞
67-69 octane	.04	.04¼
70-72 octane (regular)	.04¼	.04⅜
60-62 400	.03⅜	.03⅝

NORTH LOUISIANA (Ark. and N. La. delivery)—

U. S. Motor grades:		
62 octane and below	.04¼	.04½
63-66 octane	.04⅜	.04⅝
70-72 octane (regular)	.04⅞	.05⅛

ARKANSAS (Ark. and N. La. del.)—

U. S. Motor grades:		
62 octane and below		.04¼
70-72 octane (regular)		.05⅛

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
62 octane and below	.03⅜	.04
63-66 octane	.04	.04¼
67-69 octane	.04¼	.04½
70-72 octane (regular)	.04½	.04¾
60-62 400 grades:		
62 octane and below	.03¾	.04
63-66 octane	.04	.04¼
67-69 octane	.04¼	.04½
70-72 octane (regular)	.04½	.04¾
68-70 360	.04⅝	.04⅞

PENNSYLVANIA (Inland refineries)—

58-62 U. S. Motor		.05
72-74 octane (regular)		.06¼

CALIFORNIA (domestic movement)—

54-58 U. S. Motor	.05¾	.07
58-60 400, 65 oct. and higher	.07	.08

EAST COAST (domestic)—

U. S. Motor, 65 and above:		
*New York (Bayonne)	.06½	.07
Philadelphia	.06¾	.07
Boston	.06¾	.07¼
Baltimore	.06½	.06¾
Charleston, S. C.	.06¾	.07¼

*All grades of gasoline ⅛ to ¼ cent less for barge shipments. New York harbor prices are for New York and New England delivery. Prices for New Jersey delivery ¼ cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
65-67 octane	.04⅝	.04¾
68-70 octane	.04¾	.05
70-72 octane (leaded)	.05	.05¼

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70		.02
Grade 18-55	.02⅝	.02⅝

NORTH TEXAS—

Grade 26-70		.01¾
Grade 18-55		.02⅛

CALIFORNIA—

75-85 375-390	.05¾	.06

NORTH LOUISIANA (Ark. and N. La. delivery)—

Grade 26-70		.02⅛

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 i.b.p., 110-flash, 540-550 e.p.	.03¾	.03⅞
41-43 gr., 300-320 i.b.p., 110-125 flash, 500-520 e.p.	.03¾	.03⅞
46-48 gr., 210-230 i.b.p., 480-max. e.p.	.04	.04⅛

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

41-43	.03¾	.03⅞
42-44	.03⅞	.04

NORTH TEXAS—

41-43	.03¾	.03⅞

NORTH LOUISIANA (Ark. and N. La. delivery)—

41-43	.03⅝	.03¾

ARKANSAS (Ark. and N. La. del.)—

41-43	.03¾	.03⅞

PENNSYLVANIA (inland refineries)—

45	.05	.05¼
46		.05⅛
47		.05¼

CHICAGO (Based on Group 3)—

41-43	.03¾	.03⅞
42-44	.03⅞	.04

CALIFORNIA (Pac. Coast market)—

38-43 high burning test	.04½	.05¾

NEW YORK (Bayonne, N. J.)—

41-43	.056	.065

***GULF COAST (domestic)—**

41-43		.04½

*Barge price ⅛ cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

Range oil	.03¾	.04
No. 1 prime white, 38-42	.03¾	.03⅞
No. 1 straw, 38-40	.03⅝	.03¾
No. 2 straw, 32-36	.03½	.03⅝
No. 2 dark, 32-36	.03⅝	.03½
No. 3 zero to 10, 28-32	.03⅜	.03½
No. 3, 15 and above, 28-32	.02¾	.03

NORTH TEXAS—

No. 1 prime white, 38-42	.03¾	.03⅞
No. 1 straw, 38-40	.03⅝	.03¾

NORTH LOUISIANA (Ark. and N. La. delivery)—

No. 2, 32-36	.03⅛	.03¼

ARKANSAS (Ark. and N. La. del.)—

No. 2, 32-36		.03⅝

CHICAGO (Based on Group 3)—

Range oil	.03¾	.03⅞
No. 1 prime white, 38-40	.03¾	.03⅞
No. 1 straw, 38-40	.03⅝	.03¾
No. 2 straw, 32-36	.03½	.03⅝
No. 2 dark, 32-36	.03⅝	.03½
No. 3, zero to 15, 28-32	.03⅜	.03½
No. 3, 15 and above, 28-32	.02¾	.03

NEW YORK (Bayonne, N. J.)—

*No. 1	.056	.065
*No. 2	.051	.055
*No. 4	.0475	.051

*Barge deliveries ⅛ to ¼ cent under above tank-car price.

Gas Oil and Fuel Oil

(Gas oil per gal., fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil, under 35	.02⅝	.02¾
No. 5, low pour point, 18-22	.70	.77½
No. 6, 15 and above, 8-14	.50	.55

NORTH TEXAS—

U.G.I. gas oil, under 35	.02⅝	.02¾
No. 5, low pour point, 18-22	.75	.80
No. 6, 15 and above, 8-14	.50	.55

NORTH LOUISIANA (Ark. and N. La. delivery)—

10-14 fuel oil, industrial	.70	.75

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.02⅝	.02⅞
No. 5, low pour point, 18-22	.75	.80
No. 5, 15 and above, 18-22	.60	.70
No. 6, low pour point, 10-16	.60	.70
No. 6, 15 and above, 10-16	.50	.55

PENNSYLVANIA (inland refineries)—

36-40	.04	.04½

CALIFORNIA—

Los Angeles:		
30-40 gas oil, per bbl.	1.15	1.25
24 plus diesel, per bbl.	1.15	1.25
24 plus diesel (bunkers)	1.20	1.35
12-16 (bunkers at tidewater)	.65	.75
10-16 (cargo lots)	.65	.75
12-17 (tank cars)	.60	.75
10-17 (high sulfur)	.50	.65
San Joaquin Valley:		
10-18 (tank cars)	.50	.70
24 plus diesel, per bbl.	1.15	1.25
San Francisco:		
24 plus diesel, per bbl.	1.35	1.40
24 plus diesel (bunkers)	1.40	1.50
10-16 (bunkers)	.80	.85

GULF COAST—

No. 2 fuel		.04¼
43-47 diesel		.04
48-52 diesel		.04¼
53-57 diesel		.04½
58-and-above diesel		.04¾
Bunker C (bulk cargoes)	1.00	1.05
Bunker C (bunkers)	.90	1.05

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil	.051	.052
28-30 diesel (lighterage 6¼c per bbl.)	2.10	2.20
28-30 diesel (tank cars)	.05	.053
Bunker C (to ocean-going ships in N. Y. Harbor)		1.50
Industrial fuel (tank cars)	.035	.04

Lighterage charge 5c bbl. additional.

Bright and Steam Refined

OKLAHOMA (Group 3)—

190-200 D, 15-25	.28
150-160 D, 0-10	.25
150-160 D, 15-25	.24
150-160 E, 15-25	.24
100-110 D, 0-10	.24
Steam refined:	
600 dark green (untreated)	.08

PENNSYLVANIA—

Bright Stocks (Pennsylvania Grade No. 8 color, 140-150 at 210, 545-550 flash):		
10 pour point	.27½	.29½
15 pour point	.26½	.28½
25 pour point	.25	.27
Steam refined:		
600	.14½	.15½
650	.16½	.17½
600 flash	.18½	.19½
630 flash	.21½	.22½

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

0-10 pour point:		
150-3		.13
180-3		.14
180-4		.13½
200-3		.14½
200-4		.14
250-3		.16
250-4		.15½
280-3		.17
280-4		.16½
300-3½		.17½
400-3½		.18½
100-2½ paraffin oil		.07½
15-25 pour point:		
200-3		.14
200-4		.13½
250-3		.15½
250-4		.15
280-3		.16½
280-4		.16

GULF COAST—

Pale oils:		
200-3	.07¼	.07½
300-3	.07¾	.08
500-3½	.08½	.09
750-3½	.09	.09½
1,200-3½	.09¾	.10
2,000-4		.10¼
Red oils:		
200-5-6	.07	.07¼
300-5-6	.07½	.07⅝
500-5-6	.08¼	.08¾
750	.08¾	.09¼
1,200-5-6	.09⅜	.09⅝

CALIFORNIA (moving to dom. market)—

Pale oils:		
100-2½-3	.07¼	.08
200-2½-3	.07¼	.08
300-2½-3	.07¼	.08
400-3-4	.07¼	.08
450-3-4	.07¼	.08
550-3-4	.09	.11
600-3-4	.09	.11
Red oils:		
200-4-5	.07¼	.08
300-5-6	.07¼	.08
350-5-6	.09¼	.11¼
400-5-6	.09¼	.11½
450-5-6	.09¼	.11½
500-5-6	.09¼	.11½
600-5-6½	.09¼	.11½
700-6½ plus	.09¼	.11½
750-6½ plus	.09¼	.11½
900-6½ plus	.09¼	.11⅛

PENNSYLVANIA—

150 vis. at 70° F., 3 color, 400-405 flash:		
Zero pour point		.28½
10 pour point		.27½
15 pour point		.26½
25 pour point	.25	.26
200 vis. at 70° F., 3 color:		
Zero pour point		.30½
10 pour point		.29½
15 pour point		.28½
25 pour point	.27	.28

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (A.m.p.) w.c. scale		.05½

PENNSYLVANIA (inland refineries)—

122-124 (A.m.p.) w.c. scale	.05⅝	.06
124-126 (A.m.p.) w.c. scale	.05⅝	.06⅛

NEW YORK—

Wax in bags fully refined:		
125-127 (A.m.p.) wax	.060	.063
128-130 (A.m.p.) wax	.061	.064
130-132 (A.m.p.) wax	.064	.066
133-135 (A.m.p.) wax	.067	.068
135-137 (A.m.p.) wax	.069	.072
Crude scale:		
124-126 (A.m.p.) w.s.	.055	.0575
124-126 (A.m.p.) y.s.	.055	.0575
Petrolatum in barrels, carload lots:		
Dark green	.03125	.03375
Amber	.03375	.03625
Extra amber	.03625	.03875
Lily white	.05875	.06000
Snow white	.06875	.07000
Cream	.04875	.05000

Export Prices

GASOLINE

GULF COAST—

U. S. Motor	.05⅛	.05⅜
60-62 400	.05¼	.06¼
61-63 390	.05¼	.06⅛
64-66 375	.05⅝	.06¼

LOS ANGELES—

U. S. Motor grades:		
60-65 octane	.05½	.05¾
65-69 octane	.05¾	.06¼
Above 69 octane	.06¼	.06½

KEROSENE

GULF COAST—

41-43 water white	.04¼	.04¾

LOS ANGELES—

41-43 water white	.05	.05¼

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.o.s. in bbl.)—

Cylinder stocks:		
600 S.R. unfiltered	.22½	.23
630 S.R. unfiltered	.24	.25½
600 flash, S.R.	.25½	.26½
630 flash, S.R.	.31	.32
Bright stock:		
Light, 25 pour point	.34	.36

NEUTRAL OIL

200-3 color	.38	.38½
150-3 color	.36	.37

PARAFFIN WAX

NEW YORK (prices per pound)—

123-125 A.m.p.	.070	.0720
125-127 A.m.p.	.074	.0750
128-130 A.m.p.	.076	.0775
133-135 A.m.p.	.080	.0850
135-137 A.m.p.	.087	.0900
Crude scale:		
124-126 w.s.	.055	.05750
124-126 y.s.	.055	.05750

Market Record of Active Oil Stocks

Compiled by Carl H. Pforzheimer & Co., 25 Broad Street, New York City, Member New York Stock Exchange and New York Curb Exchange

New York Stock Exchange

1940 High	1940 Low	Week ended Feb. 24 High	Week ended Feb. 24 Low	Week ended Feb. 24 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1939	Com. sh. earn. 1938	Com. sh. earn. 1937	1939 High	1939 Low	1938 High	1938 Low
56⅛	53¼	56½	54½	54½	Amerada Corp.	788,675	N.P.	50cQ	1-31-40	$2.00	$2.07	$3.04	74½	50	78	55
23⅜	20½	23⅜	22	22	Atlantic Refining	2,663,999	$25	25cQ	3-15-40	1.00	1.40	3.51	24⅜	18⅛	27⅜	17⅜
15½	13⅜	15¼	14½	14½	Barber Asphalt Co.	390,223	$10	25c	2-20-40	.25	—.85	1.91	21	10¼	23⅜	12⅛
11⅜	11¼	11⅜	11¼	11⅜	Barnsdall Oil Co.	2,250,344	$5	15c	3-9-40	.90	1.26	.85	19½	11⅜	21⅜	10⅛
8	7	7⅜	7⅛	7⅛	Consolidated Oil Corp.	13,751,846	N.P.	20cQ	2-15-40	.80	.55	1.48	9⅞	6⅛	10⅜	7
25	22½	24½	23½	24	Continental Oil of Delaware	4,682,581	$5	25cQ	3-25-40	1.00	1.10	2.98	31½	19⅞	35⅜	21¼
6⅞	5⅝	6	5⅝	5⅝	Houston Oil	1,098,618	$25	....	10-17-30	....	.83	.94	9⅜	4½	9⅜	5
13¼	11⅜	13	12⅜	13	Lion Oil Refining	435,815	N.P.	25cQ	12-23-39	1.00	2.09	2.17	18⅛	10	25⅛	15⅝
16⅜	13⅞	14½	14	14	Mid-Continent Petroleum	1,857,912	$10	35c	12-1-39	.60	.56	2.86	18	11⅛	22⅝	12¼
10⅝	9⅝	10⅛	9⅞	9⅞	Mission Corporation	1,379,245	$10	40c	12-15-39	.65	1.04	1.31	14⅞	8⅜	17⅜	10⅝
9¾	8⅛	9¼	8¾	9	National Supply	1,155,517	$10	....	12-22-37	....	—.79	4.90	15½	5⅝	23	12½
7⅝	6⅝	6⅞	6½	6½	Ohio Oil Co.	6,563,377	N.P.	20c	12-15-38	....	.25	1.30	10⅛	6	14⅞	8⅞
8¼	7¼	..	..	..	Pacific Western Oil	1,000,000	N.P.	40c	12-19-39	.40	1.22	1.39	11⅞	7	15⅞	10¼
7⅜	6⅜	7⅜	7⅜	7⅜	Pan American Pet. & Trans.	4,702,945	$5	....	12-31-37	....	.08	1.18	8⅜	5	9¼	6⅛
41⅝	38¼	40	38¼	38⅝	Phillips Petroleum	4,449,052	N.P.	50cQ	3-1-40	2.00	2.03	5.42	46½	31¼	44⅝	27¼
22⅜	20½	22	21⅜	22	Plymouth Oil Co.	1,006,200	$5	35cQ	3-30-40	$1.40	2.59	2.85	24	17½	25⅝	15
9¼	8⅛	8⅝	8¼	8⅝	Pure Oil Co.	3,982,031	N.P.	25c	12-20-39	.25	.38	2.15	11⅝	6⅜	13½	8¼
8⅜	7	7¼	7	7⅛	Richfield Oil Corp.	4,010,000	N.P.	50c	12-18-39	.50	.51	.35	10¼	6⅝	9⅜	5
20	18	18¾	18¾	18¾	Seaboard Oil of Delaware	1,244,383	N.P.	25cQ	3-15-40	1.00	1.52	1.97	24⅝	15½	27½	15½
13½	10⅞	11½	11	11	Shell Union Oil	13,070,625	N.P.	25c	12-20-39	.50	.72	1.44	17⅛	9⅞	18⅜	10
22¼	19½	20⅝	20½	20⅜	Skelly Oil	995,349	$15	25c	1-30-40	.75	2.27	6.07	29½	15½	34⅜	18½
12½	11¼	11⅝	11¼	11⅝	Socony-Vacuum	31,206,071	$15	25cSA	9-15-39	.50	1.29	1.82	15⅜	10¼	16⅝	10⅜
26⅛	24	24¼	23⅞	24	Standard Oil of California	13,004,153	N.P.	25cQ	3-15-40	1.10	2.22	3.17	33⅝	24¼	34⅞	25⅛
27¾	25⅞	27⅛	25½	25½	Standard Oil (Indiana)	15,272,020	$25	25c	3-15-40	1.25	1.82	3.66	30	22⅜	35½	24⅜
46½	42⅜	44⅜	42⅜	42⅞	Standard Oil of New Jersey	26,618,065	$25	75c‡	12-15-39	‡1.25	2.86	5.64	53½	38	58⅜	39⅜
63⅝	56¼	63⅝	60	60	Sun Oil	2,316,484	N.P.	25c*	3-15-40	1.00	1.07	3.86	66	45⅝	65¼	45
2½	2	2⅛	2	2⅛	Superior Oil Corp.	1,388,979	$1	10c	12-28-38	....	.24	.32	3⅝	1⅜	4¼	1⅜
46⅞	42⅜	44¾	43⅜	44⅛	Texas Corp.	10,876,882	$25	50cQ	1-2-40	2.00	2.13	5.02	50⅜	32½	49⅝	32⅜
4⅛	3½	3⅞	3¾	3¾	Texas Gulf Producing Co.	888,146	N.P.	10c	12-15-39	.20	.86	.68	5¾	3¼	5⅞	2⅝
8⅝	7½	7⅝	7½	7½	Texas Pacific Coal & Oil	888,236	$10	10c	12-1-39	.40	1.16	1.11	11⅜	7	12½	7
11⅜	10	10½	10⅛	10¼	Tide Water Associated	6,375,253	$10	15c	3-1-40	.80	1.28	2.08	14¼	9½	15⅝	10⅛
17½	16	16⅞	16	16⅛	Union Oil Co. of California	4,666,270	$25	25c	11-10-39	1.05	1.47	2.58	19⅝	15⅛	22½	17⅛
27	22¾	27	26⅜	26½	Union Tank Car Co.	1,177,381	N.P.	40c†	12-1-39	1.30	1.16	1.70	24¼	20⅛	23½	20
3⅝	3⅛	3⅛	3⅛	3⅛	Wilcox Oil & Gas	487,568	$5	10c	2-15-40	....	.52	.24	4⅛	2⅜	3½	1⅝

*Also 5 per cent in stock. †Includes extras. ‡Also 2 per cent in stock. §Also 4 per cent in stock. ‖Also 2½ per cent in stock. ¶Also 1½ per cent in stock. —Deficit.

New York Curb Exchange

1940 High	1940 Low	Week ended Feb. 24 High	Week ended Feb. 24 Low	Week ended Feb. 24 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1939	Com. sh. earn. 1938	Com. sh. earn. 1937	1939 High	1939 Low	1938 High	1938 Low
7⅜	6⅛	6⅝	6⅜	6½	American Republics Corp.	1,308,049	$10	10c	7-11-38	....	—$0.22	$0.27	11⅜	5½	11⅜	5
3¼	2⅜	2⅞	2⅜	2⅞	Bridgeport Machine Co.	270,000	N.P.	$1.25	12-30-37	....	—.14	1.90	7¼	2½	10¼	4⅞
43	28	40	40	40	Buckeye Pipe Line Co.	200,000	$50	$1	3-15-40	$2.50	2.36	4.02	34⅝	26½	39	22½
116	110	112	111½	112	Chesebrough Mfg. Co.	120,000	$25	$1.50Q†	3-29-40	6.00	5.32	6.73	130	108⅝	128	97
5	4	5	4⅝	4⅝	Cities Service (new)	3,704,067	$10	....	6-1-32	....	.23	1.02	9¼	4¼	11	5⅛
1½	1⅛	1⅜	1¼	1¼	Cosden Petroleum	462,551	$1	....	.....	.....	....	.19	2¼	½	2⅜	⅞
22⅜	20	21½	20	20	Creole Petroleum	6,975,383	$5	50cSA†	12-15-39	1.00	1.64	1.61	28	16⅜	27½	17½
4⅜	4⅛	..	..	..	Darby Petroleum	351,390	$5	25cSA	1-15-39	.25	....	1.36	7⅛	3⅝	10⅛	5½
2	1⅝	2	1¾	1¾	Derby Oil & Refining	263,162	N.P.	....	.....	.....	—.91	1.34	2⅝	1½	3½	1½
26½	23½	26½	26½	26½	Eureka Pipe Line	50,000	$50	50c	11-1-39	2.00	—.37	—.12	23	15⅛	31	16
39⅞	35⅛	36⅝	35⅛	35⅛	Gulf Oil Corp.	9,076,202	$25	25cQ	12-15-39	1.00	1.43	3.51	45⅛	29¼	46⅞	33
68	59¾	61⅝	59¾	59⅞	Humble Oil & Refining	8,987,840	N.P.	62½c	12-16-39	2.00	3.98	5.22	71	52½	72⅝	56
12⅜	11⅝	11⅞	11⅝	11⅝	Imperial Oil of Canada	26,965,078	N.P.	37½c†	12-1-39	1.00	.96	.98	17	11⅜	19⅛	14⅛
6⅝	5¾	6⅝	6	6	Indiana Pipe Line	300,000	$10	20c	11-15-39	.50	.47	1.03	7¼	5½	9⅝	6
19¾	17¼	18⅝	18	18	International Petroleum	14,324,088	N.P.	75c	12-1-39	1.75	1.98	....	27½	17	31¼	21
2¾	2¼	2⅜	2¼	2¼	Kirby Petroleum Co.	500,000	$1	10c	4-15-38	....	.14	.17	3⅜	2⅛	5	2⅛
10⅜	9⅝	9⅞	9¾	9⅞	Lone Star Gas	5,553,747	N.P.	30c	12-22-39	.70	.88	1.14	10½	7⅛	10⅜	6⅝
6	5	5¼	5⅛	5⅛	Louisiana Land & Exp.	2,977,449	$1	10c	3-15-40	.35	.45	.58	7⅜	4	9⅜	6½
8	7½	7⅝	7½	7½	Midwest Oil Co.	998,474	$10	45c	12-15-39	.90	.93	1.14	8¾	6⅝	9⅜	6⅝
5⅜	5¼	5½	5½	5½	Mountain Producers	1,593,584	$10	30cSA	12-15-39	.60	.62	.76	6	4⅞	5⅜	4½
13⅛	12	12¾	12½	12½	National Fuel Gas	3,810,183	N.P.	25cQ	1-15-40	1.00	.84	.96	14	11¼	14⅝	11½
10¾	8¾	10⅜	10¼	10⅝	National Transit	509,000	$12.50	50c	12-15-39	.85	.88	1.19	9½	7¼	9¼	6½
1¼	1	1	..	..	New Mexico and Arizona	1,000,000	$1	1c	12-1-37	....	.02	.02	1⅜	1	2⅝	1½
6⅛	5¼	6¼	5⅜	6¼	New York Transit	100,000	$5	25c	10-14-39	.40	.16	.49	6	4	4½	3½
7¼	6¾	7½	7	7⅜	Northern Pipe Line	120,000	$10	15c	12-1-39	.30	.24	.78	7	4½	6	4
5⅜	4⅝	5¼	4⅞	5⅛	Pantepec Oil	2,857,000	$1	....	.....	....	....	....	7⅝	4	7¾	3½
3¼	2⅜	2⅜	2⅜	2⅜	Root Petroleum Co.	336,045	$1	25c	2-1-37	....	.17	—.17	5	1¼	4½	1⅝
2½	1⅞	2	2	2	Ryan Consolidated	298,931	N.P.	....	.....	....	.29	.46	3	1⅞	4	2½
7	4⅞	7¼	7	7	Southern Pipe Line	100,000	$10	15c	3-1-40	.30	—.27	.85	4⅞	3½	5⅝	3¼
44	40⅛	41¾	41⅝	41⅝	South Penn Oil	1,000,000	$25	$1.87½Q†	12-15-39	3.00	1.44	4.64	40½	26⅝	39	28⅝
35	22	35	30	35	Southwest Penna. Pipe Lines	35,000	$50	$5	4-1-40	2.00	—.41	.95	23	18	22¼	16½
20⅞	20	20⅞	20½	20½	Standard Oil of Kentucky	2,604,790	$10	25c	3-15-40	1.30	1.45	1.60	20⅛	17¼	18⅜	15
32¼	29	30¼	29⅝	29⅝	Standard Oil of Ohio	753,740	$25	25c	3-15-40	1.50	1.81	3.67	32¾	17	22¾	16¼
2	1⅜	1⅞	1⅜	1⅜	Sunray Oil	2,007,076	$1	5c	5-1-40	.10	.23	.42	2⅜	1⅜	3¼	2
2⅜	2½	2⅜	2⅜	2⅜	Texon Oil & Land	936,024	$2	10c	3-29-40	.10	.56	.51	4	2⅝	5¼	3½
3⅜	2⅜	3	2⅜	2⅞	Transwestern Oil Co.	750,000	$10	....	.....	....	—.12	.48	6	2½	7⅝	4¼
2⅛	1½	1⅝	1½	1½	United Gas Corp.	7,818,959	$1	....	.....	...	—.51	.25	3⅜	1½	5¼	2⅝

†Includes extras. —Deficit.

EQUIPMENT PROGRESS...

Ford V-8 Trucks Designed for Hard Service in Oil Fields

Materials and construction designed for the kind of difficult service shown in the illustration are incorporated in Ford V-8 trucks for 1940. The unit pictured,

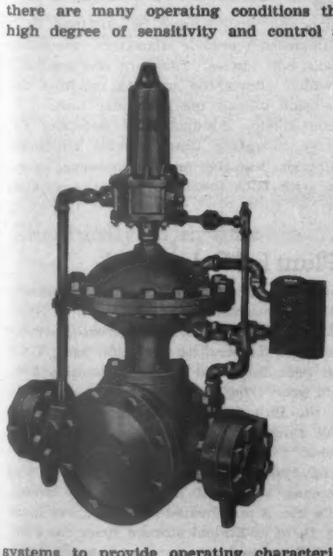
owned by Wabash Swabbing Co. of Grayville, Ill., carries equipment for servicing oil wells, including a folding mast which extends to 50 ft.

The new trucks feature simplified chassis construction, which makes it easier to service clutch, transmission, and rear axle. Installation of special equipment such as heavy-duty two-speed axles and auxiliary transmissions is greatly facilitated.

Longitudinal front springs, a new low radiator mounting and the new position of the fan on the engine crankshaft combine to make the engine more accessible and easier to service from top and bottom.

Emco Pilot-Loading Control Systems Afford Accuracy

In the application of regulators for pressure control, there are many operating conditions that require a high degree of sensitivity and control accuracy. Recent developments in distribution, measurement, and combustion service demand close control of operating pressures. In anticipation of these requirements, Pittsburgh Equitable Meter Co. has perfected Emco pilot-loading control systems to provide operating characteristics said to have been unattainable in former conventional regulators. The manufacturer says it is no longer necessary to tolerate pressure fluctuations which in the past have been accepted as unavoidable in all regulators. With the new Emco controls, it is stated that regulation accuracies within 1 per cent are commercially available without resorting to delicate instruments.



For outlet pressures of 2 to 300 lb., the Emco pilot-loading system may be applied to any Emco high-pressure balanced-valve regulator originally built for lever and weight loading as well as to new regulators. For outlet pressures above 300 lb., the standard lever and weight loading is generally satisfactory because two-stage reduction should be employed for these higher pressures, and the second-stage regulator can be arranged with pilot loading for close control of the final pressure.

The advantages of the Emco pilot-loading system are described in Bulletin 1055, which will be sent by Pittsburgh Equitable Meter Co., 400 North Lexington Street, Pittsburgh, Pa.

Job-Rated Trucks for 1940 in Six Capacities Offered by Dodge

"In announcing job-rated trucks for 1940," said T. W. Moss, director of Dodge truck sales, "we feel that Dodge is making an important contribution to raising the level of truck transportation efficiency in the United States. Truck owners and operators today are demanding, more than anything else, a truck to fit the job it is intended to do.

"For 1940 Dodge is producing job-rated trucks in six different capacities, ranging from ½ ton to the 3-ton Dodge diesel trucks; 1940 also marks the introduction of the Dodge-built 1½-ton cab-over-engine models. Dodge job-rated trucks are powered by six different engines, each engineered for the truck in which it is installed. Sixteen gear ratios are available, and 96 standard chassis and body models are offered in 17 different wheelbase lengths.

"Each model in the line is designed and built to handle its maximum capacity—to fit the hauling job it is intended to do.

"Experience has proved—and virtually all truck owners concur—that if trucks are overpowered or overweight for the loads they carry, owners pay a penalty in excessive operating costs. On the other hand, if they are underpowered and structural units are undersized, upkeep and maintance costs mount rapidly to unreasonable and uneconomic figures.

"Truck operations are so wide and varied in size of loads, in materials hauled and in operating conditions that it requires a wide range of truck models, wheelbase lengths, gear ratios, etc., to adequately meet the specific needs of every truck operator.

"To meet the needs of truck users, Dodge is now designing and building job-rated trucks, which it is claimed, fit 97.3 per cent of the nation's hauling jobs. In addition to the six capacities, six engines, 96 chassis and body models already mentioned, Dodge job-rated trucks use four different clutches, three transmissions, eight different sizes of rear axles, 20 different frames, nine basic spring combinations and six combinations of brake sizes.

"A wide range of extra equipment includes tire combinations for every known need."

Takes Over Humble Appliances

Engineering Laboratories, Inc., Tulsa, has taken over the manufacture, sales, and service of the subsurface pressure gages, clock chart-turning devices, recording thermometer, bottom-hole sampler, and auxiliary equipment designed by the Humble Oil & Refining Co., according to W. G. Green, president of Engineering Laboratories. The transfer was effective January 1.

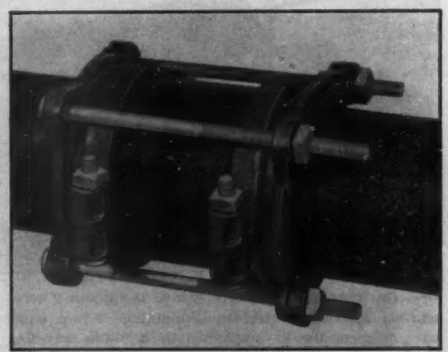
Built-In Rotary Hose Couplings Offer Various Improvements

A built-in rotary hose coupling for use in oil-well drilling operations, reported as an important advance in rotary-hose-coupling development is announced by the Mechanical Goods Division, United States Rubber Co., New York. The new coupling and hose are said to incorporate many improvements over previous types, particularly in that its construction principle results in the connection becoming tighter and tighter as more and more pressure is applied.

According to a bulletin issued by the company, the new product, available in both "U. S. Matchless" and "U. S. Peerless" brands, contains no flanges, clamps, nozzles, bolts, nuts, or hydraulic nipples. "Employing a new method of anchorage, the coupling, made of the toughest alloy steel obtainable," the bulletin says, "results in a perfect balance in hose and coupling stresses under full pressure. Its construction assures full flow through increased fluid area. Its performance has been proven both in the field and laboratory, and the assembly embodies more than enough strength for all types of drilling operations."

Heavier and Simpler Clamp Is Introduced by M. B. Skinner

M. B. Skinner Co., 3502 West Sample Street, South Bend, Ind., announces an improved Skinner-Seal collar leak clamp. Retaining the sealed-gasket principle, from which the Skinner-Seal trademark is derived, the clamp has been made much heavier and simplified for easier application, the gasket container ring being equipped

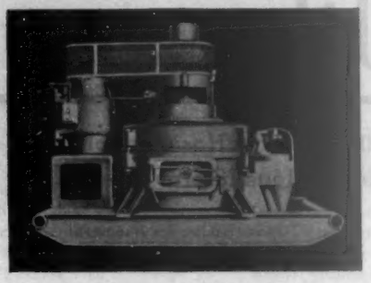


with bolts (same size as pull bolts) instead of cap screws.

The bolts are heavier on some sizes and all are of high strength, heat-treated type, cadmium-plated. A handy socket wrench for applying the clamps is enclosed in each carton of three clamps.

Merco Concentrator Perfected For Maintaining Mud Weight

The new Merco Type A-24 concentrator has been designed specifically to maintain mud weight without needless waste of surplus weighting material. Under



this method the Merco concentrator is installed adjacent to the mud ditch, where it takes off a small portion of previously desanded mud (from 10 to 25 g.p.m.). This may be diluted with 1 to 2 parts of water. The diluted weighted mud then is centrifuged and the weighting material concentrated in the underflow, from where it is remerged with the circulating mud stream.

The colloids, gas, and excess water are decanted in the overflow of the concentrator and go to waste. Any desired concentration may be obtained thereby up to a density of 120 lb. per cu. ft.

It is not necessary to operate the concentrator continuously, but only so long as the weight of the mud from the well is decreasing or the viscosity is increasing. If it is desired, the weight can be reduced by diverting weighting material to storage.

Upon completion of the well the residual mud can be treated for reclamation of the weighting material in a highly concentrated fluid for storage or further use.

The new Merco concentrator is designed for concentrating mud-weighting material, while the Merco desander is designed for extracting sand and cuttings from the mud. The concentrator is constructed for much higher speed.

A new bulletin, No. X-244, with flow chart, describing this new machine, may be obtained by writing Merco Centrifugal Co., 343 Sansome Street, San Francisco, Calif.

Accuracy and Low Pressure Loss Characterize New Smith Meter

High degree of accuracy and low pressure loss are outstanding characteristics of the newest addition to Smith Meter Co.'s line of gasoline and oil meters.

The S-12 meter has 2-in. flanged connections in line for convenient bolting into the pipe line, and is built for 125 lb. pressure. It has a sustained capacity rating of 120 U. S. g.p.m. and a hair-line accuracy that can be regulated to micrometer dimensions by the new built-in calibrator. The calibrator adjusting dial is located outside the meter, under a small cap, which can be sealed, thus preventing unauthorized persons from changing the adjustment.

Pressure loss through the meter is less than the loss through two pipe elbows of the same size as the meter connections. This low pressure drop—a characteristic of all Smith petroleum meters—is brought to the highest development in the S-12 by the use of streamlined flow passages, together with liberal use of high-grade stainless ball bearings.

Used for bulk-plant loading racks, pipe lines, refinery and similar services, the S-12 can be furnished with a horizontal reset counter, incorporating a totalizer; a horizontal nonreset counter (totalizer only); a 6-in. diameter vertical dial, with totalizer; a 10-in. diameter vertical dial, with totalizer; or a ticket printer.

TRADE LITERATURE

THE LINDE AIR PRODUCTS CO., 30 East Forty-second Street, New York.—Guide for welding 30 different metals and alloys (Chart 4464).

CATERPILLAR TRACTOR CO., Peoria, Ill.—Bulletin 5917, "Caterpillar" 800-G engine.

JENKINS BROTHERS, 80 White Street, New York.—30-page booklet, "Jenkins Recommends," on selection of valves for use in connection with boilers, engines, turbines, diesels, pumps, heaters, and related equipment.

WORTHINGTON PUMP & MACHINERY CORP., Harrison, N. J.—Three bulletins, Worthington steam-jet ejectors, two-stage condensing type; Worthington angle gas-engine compressors, Type LTC; Worthington rock hammers, No. 45.

MECHANICAL GOODS DIVISION UNITED STATES RUBBER CO., 1790 Broadway, New York.—34-page booklet, "U. S. Hose Hints," suggestions for increasing life of rubber hose.

GUIBERSON CORP., Dallas, Tex.—Second edition of "The Guiberson Gas-Lift Manual," containing data, tables, diagrams.

CHICAGO BRIDGE & IRON CO., Old Colony Building, Chicago.—January number of Water Tower.

STONEHOUSE SIGNS, INC., Denver, Colo.—Bulletin 2057, signs to guard against machine, elevator, and eye hazards.

BEAVER PIPE TOOLS, INC., Warren, Ohio.—Catalog 40, 24 pages, Beaver pipe tools, featuring new pipe and bolt threader.

MORSE CHAIN CO., Ithaca, N. Y.—Bulletin R-54, a 24-page booklet containing helpful roller-chain engineering data for power-transmission engineers, plant executives, and designers.

BETHLEHEM NOW HAS LARGE WAREHOUSE IN HOUSTON

The new Bethlehem Steel Co. warehouse, or mill depot, at 7100 Clinton Drive, Houston, Tex., is one of the largest warehouses in the South designed to handle concrete piers, to insure protection from dampness. Unusual features are the ramp truck driveway, which continues through the building, connecting at the rear

steel products. This structure, which has about 2 acres of floor space, is a steel-frame building of four equal bays, each of the bays spanned by a 10-ton traveling crane. The exterior is made of hard-burned yellow brick facing up to the lower tier of steel-sashed windows, and the remainder of the wall is sheathed in heavy corrugated galvanized sheets, painted in a battleship-gray color.

The floor of the building is about 5 ft. higher than the street level, the heavy slab being supported by with a driveway; tracks running through the building on each end for incoming and outgoing materials; motor-driven Mayari R steel doors, and an elaborate drainage system designed to handle rainfall up to a 9-in. per hour rate over a short period of time. The roof is of asbestos-protected steel, fitted with large skylights surmounted by a continuous ventilator.

This new warehouse was constructed as a mill depot to take care of an increased demand for galvanized and hot-rolled sheets, wire products, rope, and strand.

Cost of Pumping With Beam-Type Rig Cut by Sullivan Alleviator

The Sullivan Alleviator is a practical new device for attachment to beam-type pumping rigs and it is said to be materially reducing pumping costs for many major

producers. The Alleviator is a pneumatic cylinder-and-piston assembly for connecting beam and rod string (in place of the usual rigid connection). The cylinder hangs on the beam, and the piston is attached to the polish rod. This floats the rod string and maintains a uniform upward-working load.

Pumping effort is distributed evenly over the entire stroke. This reduces peak loads and reduces rod breakage and shock on the entire rig. Savings up to $713 per month are said to have been proven. Specific examples of savings effected on various installations are given in Bulletin T-101, obtainable from Sullivan Machinery Co., Michigan City, Ind.

U. S. Electrical Motors Equipped With Unimount End Shields

U. S. electrical motors, made by U. S. Electrical Motors, Inc., Department 101, 80 Thirty-fourth Street, Brooklyn, N. Y., are now available with unimount end shields. These end shields have a flat surface to facilitate the mounting of pumps and other directly driven equipment and for mounting magnetic brakes. They

may be assembled on either end of the motor and can be used to mount a footless motor to a machine frame if desired.

The unimount end shields may be obtained in a number of standardized outside diameters, mounting machine fits, and bolt circles. They are also available unmachined, which allows the user to machine the mounting dimension to suit his particular unit.

Unimount end shields eliminate the necessity for an adaptor, save mounting time, provide Uniclosed dripproof protection for the motor, conserve space, and harmonize with both the motor and the application.

Ryerson Plant Is Modernized

A reconstruction and expansion program recently completed at the steel-service plant of Joseph T. Ryerson & Son, Inc., in Philadelphia, Pa., increases service and storage facilities for steel users in that area. Total floor space has been increased by approximately 250,000 sq. ft., and over 1,750 items have been added to stocks, giving the Philadelphia Ryerson plant an exceptionally wide range of steel and allied products for prompt shipment.

A new high-bay-type mill building 185 by 120 ft. was erected for storing structural lines, such as beams, angles, channels, etc. A new heated building gives more than 20,000 sq. ft. of additional storage space for cold-finished bars, full-finished sheets, mechanical tubing, and other high-quality steels.

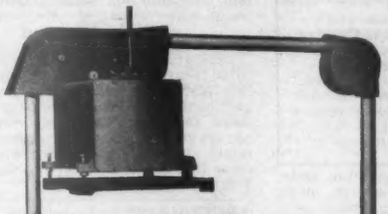
Remote-Reading Liquid-Level Gage Simplifies Operation

A remote-reading liquid-level gage announced by Guardian Electric, 1621 West Walnut Street, Chicago, is said to answer a definite need in the petroleum and allied products storage fields, and wherever large quantities of liquids are stored in tanks.

Indicator panel

The Guardian gage is described as capable of measuring liquid levels in tanks of every type now in use to the nearest ⅛ in. (even finer if desired). It is said to be unaffected by temperature, weather, varying specific gravities, or distance between tanks and control office. Failure of the current supply does not affect the accuracy of the reading, according to the manufacturer, because power is used only at the time the tanks are being gaged.

The unit consists of a fully protected mechanism sealed in oil, housed in a heavy cast-aluminum tank head. Bronze gears give long life. Breakdown tests equivalent to 40 years' average use have been run with no mechanical wear apparent. Float and bridle assembly offers minimum resistance to tank currents and is designed to pass easily through standard manholes. The float displaces ¼ in. of liquid and operates



Tank-head unit

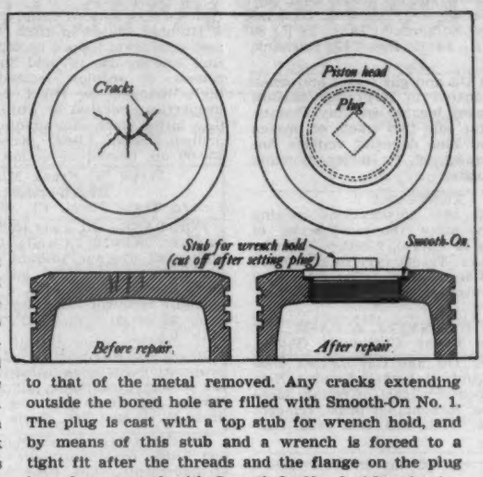
the control mechanism on as little as a 4-oz. pull. Gland sealing of the tape exit through the tank top, plus closely fitted aluminum pipe leading to the tank-head housing, permits use of the gage on all types of sealed tanks without danger of vapor loss due to pressure or loose fittings. The indicator panel can be connected to any number of tanks up to 24 standard, or more if desired. Each tank is gaged by turning the dial (lower left center of panel) to the number of the tank to be gaged, whereupon, by simply pushing a button (at lower left of panel) the exact depth lights up on the indicator panel. Feet appear in red numerals, inches and fractions in green. The new Guardian remote-reading liquid-level gage may be used on tanks up to 50 ft. in height. Bulletin G-29 gives fuller details.

Diesel Engine Pistons Repaired Effectually With Smooth-On

The high temperatures and extreme temperature changes created within the tops of the cylinders of internal-combustion engines, especially those of diesel types, often impair parts that surround or are close to the combustion chamber. A common trouble that develops in cylinders of the larger engines is the burning out of the piston heads. In severe cases some surface metal may not only burn away like grate bars in a furnace, but shrinkage cracks develop and grow with increasing use until they weaken the piston or even extend clear through the head metal and then permit part of the force of the explosion or combustion to pass into the crankcase. The engine becomes unsafe, or at least inefficient, when this condition is reached.

The cracks and burning in their earlier stages are almost invariably confined to the center of the piston-head surface, ruining this part of the piston, but leaving the rest perfectly sound.

Where this has occurred a practical repair that restores initial strength of the piston and effects a large saving over complete renewal of large pistons may be made as shown in the sketch, according to Smooth-On Manufacturing Co., 572 Communipaw Avenue, Jersey City, N. J. The weakened head metal is bored out in a lathe and the bore of the opening so formed is threaded to receive a threaded plug with flange which is cast and finished to produce a metal thickness equivalent



to that of the metal removed. Any cracks extending outside the bored hole are filled with Smooth-On No. 1. The plug is cast with a top stub for wrench hold, and by means of this stub and a wrench is forced to a tight fit after the threads and the flange on the plug have been coated with Smooth-On No. 3. After forcing the plug into a tight fit, the wrench stub is cut off to leave a surface on top of the plug corresponding to the original piston-head surface. The Smooth-On iron cement expands in metallizing, thereby giving the repaired piston the same resistance to pressure that it had when new.

AMONG EQUIPMENT MEN

Barr President of Foote Brothers

At a meeting of the board of directors on Friday, February 9, William A. Barr was elected president of Foote Bros. Gear & Machine Corp. Upon the resignation of F. H. Fowler, former president of the company in November 1939, Mr. Barr was made executive vice president and general manager. He has been vice president in charge of manufacturing for the past 8 years, having first become associated with Foote Bros. as works manager in 1929.

Havekotte Chosen President

Oscar M. Havekotte, Pittsburgh, Pa., has been elected president and general manager of the International-Stacey Corp. He succeeds Lewis J. Brown, former president, who died January 11. For the past 8 years Mr. Havekotte has been a director and a member of the executive committee of International-Stacey.

Mr. Havekotte attended the Pittsburgh public schools and the University of Pittsburgh. He became associated with the old Carnegie Steel Co., and has been with that company and its successor, the Carnegie-Illinois Steel Corp., ever since, having been assistant treasurer of the latter company. International-Stacey Corp. has three operating divisions, International Derrick & Equipment division, Stacey Brothers Gas Construction Co., and Roots-Connersville Blower Corp.

L. C. Scott With Texasteel Staff

L. C. Scott, former Mid-Continent manager of D&B division of Emsco Derrick & Equipment Co., has joined Texasteel Manufacturing Co.'s executive staff. Shortly after leaving college Mr. Scott began his career in the Mid-Continent oil fields with Bell Pump Co. of Bartlesville, Okla. He went with the old D&B Pump & Supply Co. in 1926. This company was purchased in 1927 by Emsco Derrick & Equipment Co. In 1929 Mr. Scott was made sales manager of this company, and in 1934 was made manager of the Mid-Continent division, which position he retained until after the sale of Emsco to the Youngstown-Republic interests in 1939. He is taking an active part in the expansion program of Texasteel, which is increasing both its manufacturing and distributing facilities.

Smith Off for South America

E. M. Smith, president and general manager of Globe Oil Tools Co., Los Nietos, Calif., has planned an extended tour of all South American countries in which oil development is in progress. His itinerary includes Trinidad, Colombia, Peru, Argentina, Brazil and Venezuela. He expects to reach Buenos Aires in the early part of April to remain 10 days or 2 weeks. The trip will consume several months, much of the time in direct contact with drillers and field men, acquainting them with various new Globe tools, as well as recent improvements in others in the extensive line of drilling and reaming tools for the oil fields.

"E. M." is known to oil men in many parts of the world through more than 20 years of activity in the oil-tool manufacturing industry, during which time he founded the Emsco Derrick & Equipment Co. and other Emsco companies. The Globe company recently appointed B. E. Johnston as direct factory representative in South America.

BUSINESS NOTES

C. A. Brokaw, of Eastman Oil Well Survey Co., has returned from Hannover, Germany, where for a year he supervised controlled directional drilling and directional surveying for various German oil companies. Mr. Brokaw has resumed his duties as office engineer of Eastman's Texas Gulf Coast division, in Houston.

Wackman Welded Ware Co., St. Louis, Mo., has appointed four of its men to an executive committee, with the title of executive vice president: A. F. Colling of the New York office; E. A. King, Chester, Pa., plant; L. F. McKay, Kansas City, Mo., plant, and C. L. Fiori, New Orleans, La., plant.

H. H. Yeager has been appointed assistant sales manager of Shafer Bearing Corp., 35 East Wacker Drive, Chicago, manufacturer of Shafer Radial Thrust roller bearings. He formerly was district sales manager of Dodge Manufacturing Corp.

B. E. "Buddy" Johnston has returned to South America to represent E. M. Smith Co. of Los Angeles, Calif.; Globe Oil Tools Co. of Los Nietos, Calif., and the MacClatchie Co. of Compton, Calif. As direct factory representative he will cover the active oil fields of Trinidad, Venezuela and Colombia.

Lane-Wells Co. has transferred Merle C. Bowsky from Los Angeles, Calif., to Houston, Tex. He will supervise engineering work on electrologging in the Gulf Coast. The company has started new field construction work at New Iberia, La. Offices, warehouse, etc., are being erected.

Oakite Products, Inc., New York, manufacturer of industrial cleaning materials, has appointed Dr. A. Lloyd Taylor to its technical staff.

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We have for sale many oil and gas producing properties, complete reports, various sizes, various states, also Royalties, Drilling Blocks, Oil Payments.
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OWN A LEASE in this new oil field, big discovery well just in. Box 24, Silverdale, Kans.

WELL LOGS. Drillers' logs of approximately 4,000 wells drilled in New Mexico are available from Well Log Division, New Mexico Bureau of Mines & Mineral Resources, Socorro, New Mexico. Write for price list C.

240 ACRES Butler County, Kansas; new production surrounds; will lease for developing. Arthur Nickell, Fayette, Missouri.

ALL interest of bankrupt estate in Shiloh Crib Acre Lease in NW fractional ¼ of Sec. 18 Twp. 3 S. R. 13W. Gibson County, Indiana. Producing well, equipment, and oil payment, clear or subject to encumbrances, subject to approval of Referee, 2020 First Nat'l Bldg., Oklahoma City, Okla. March 7th, 1940 10:30 A.M. For particulars write C. W. McKeehen, 715 Midwest Bldg., Oklahoma City, Oklahoma.

NINETY-FIVE acres, lead-silver mine, heart Couer D'Alene District, Idaho, proven. Two vein systems from nearby Hecla-Marsh mines, have paid $50,000,000 in dividends, run through property. $150,000 now invested, no indebtedness. Smelter nearby. $30,000 should develop to profitable production. Security ample, substantial interest in property, use of money: references. P. O. Box 1684, Tulsa, U. S. A.

TEXAS fee lands: 40 to 640 acres; only $1 acre down, balance 40 years, 5%. Oil possibilities. Pat Casey, Houston, Texas.

Leases and Drilling Blocks

SACRIFICE for immediate sale, choice Lea County, New Mexico, leases near production. 120 acres in 17 S., 32 E.; 80 acres in 17 S., 36 E.; 80 acres in 18 S., 34 E.; 80 acres in 21 S., 34 E. Box 247, Burbank, California.

FOR SALE Oil and gas leases and small production located in Kentucky shallow field, and leases located in Clay County, Tenn. Have for sale two tracts of proven Fluorspar and Zinc deposits; reports furnished on request. W. P. Harley, Bowling Green, Kentucky.

KENTUCKY
We represent two corporations owning approximately sixty thousand acres of mineral lands in Laurel, Whitley, and McCreary Counties. Tracts vary in size up to five thousand acres. Owners are interested in leasing or selling all or part of their holdings.
DOLLE, O'DONNELL & CASH
3715 Carew Tower, Cincinnati, Ohio.

FOR SALE: Oil and Gas Leases 2600 acres State Lands Roosevelt County, New Mexico, Northeastern part of county close to Texas Line. Reasonable price, ten-cent yearly rentals. Write P.O. Box 1442, Lubbock, Texas.

FOR lease 120,000 ac. in Tennessee's coal basin, on world's largest timbered plateau. Part of Appalachian coal, oil and gas field. Oil being refined here now from shallow wells. Stanolind and other large companies have leases here. G. E. Harrison, Crossville, Tennessee.

MISSING HEIRS
We search for missing or unknown heirs or legatees, also for missing owners of Real Estate, Royalty, Mineral Estates, and terminated Trust Funds. We pay our own expenses and look only to located persons for our fees. We cooperate with Attorneys on an ethical basis. R. H. Moore & Co., Burk Burnett Bldg., Fort Worth, Texas.

FOR SALE: Non-producing leases in Rooks County, Kansas. Near production. Producing leases in Jefferson County, Oklahoma. Good equipment. Write Box K-480, The Oil and Gas Journal, Tulsa, Okla.

MONTHLY INCOME FROM GAS
Five wells drilled four producers one dry. Shallow field. Pipelines in, market 7c net per 1000 cu. ft. Offset wells drilling. Single Interests one well or spread interests. Five wells available. Inquire
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New Mexico State Lessee
Wright Bldg., Farmington, New Mexico.

LOCALE with torsion balance, coredrill have positive proof, we contract T.B. Exploration core. Shotpoint. Shallow oil drilling. Take part oil. Core and T.B. Expl. Box 182, Odessa, Tex. Ph. 9572.

FOR SALE 320 acres Mineral lease of my farm West Harrison County, George Taylor and J. Pane Survey. Per acre 3.50, as I'm in need of money. Note Mineral activity in this area. E. O. Williams owner, Marshall, Texas.

HAVE 4,000 acres; Western Indiana, 8 ft. oil show at 1,000 ft. Will deal with responsible company or driller for development. William Morgan, Perrysville, Ind.

WAYNE COUNTY, Indiana. Two shallow gas wells completed. Two locations moving in on one immediately. Hancock County, Indiana. One oil well completed. Trenton production. Two new locations, Randolph County, Indiana. One location, commence thirty days. Trenton production in all three blocks. 30,000 acres in the above blocks for sale. Write Jno. M. Seip, Richmond-Leland Hotel, Richmond, Ind.

HAVE choice leases near new large discovery gas well. Kansas sector Forest City Basin. New test starting will make this real hot spot. Own a lease in this area. Address P. O. Box 366, Paola, Kansas.

Leases and Drilling Blocks

UNUSUAL OPPORTUNITY!

Eastern Shackelford County, Texas, Hogan & Humble drilled in 1922 encountered 40 feet saturation topped at 3621, oil flow before known use of acid 30 barrels, concensus of opinion located structurally high, mapped as IBEX fold, adjoining properties operated by Phillips Petroleum Co., large block surrounding well to be drilled Caddo Lime, acreage available $50.00 up, immediate action necessary.
Write W. Frank Minnicks
Oil Operator
c/o Texas Hotel, Ft. Worth, Tex.

FOR SALE—Oil lease Rogers Co., Okla. 80 acres, 23-24-16. 12 wells, 480 ft. Bartlesville sand, average amount of sand 30 ft. Successful water flood adjoining. Water trunk line thru property. Can be made a valuable lease for small amount of money. Price $2,500.00 cash. M. J. Regan, Coffeyville, Kans.

BROKERS-SALESMAN: Have attractive proposition for lease sales in Kansas sector Forest City Basin, all near new discovery well and new test starting. Address P. O. Box 366, Paola, Kansas.

INDIVIDUAL wants production, up to 500 bbls., for investment. Will consider stripper wells. Any field, any state. Illinois Oil Co., P. O. Box 1524, Tulsa, Okla.

FOR SALE—750 ft. gas production with acreage, on pipe line, eastern Kansas. Address Box K-512, The Oil and Gas Journal, Tulsa, Oklahoma.

Wanted: Capital to drill oil well on 1400-acre block Jefferson County, Illinois, within ¼ mile production. State geology and Seismograph Service definitely indicates oil structure. Four major companies offer to buy offset eighties. For complete information write or phone H. O. Whittington, 111 McCann St., Benton, Ill.

FOR SALE—Oil lease Rogers Co., Okla. 160 acres, 7-24-17. 15 wells, 480 ft., 40 ft. Bartlesville sand; 2 powers; present production about 100 bbl. per month. Estimated core from 12,000 to 14,000 bbl. per acre. Strictly a repressure proposition. Ample water. Water flood in this vicinity highly successful. Price $12,500.00. M. J. Regan, Coffeyville, Kansas.

TEXAS
5,000-acre block in one of the hottest counties in Texas good geology. Will give one fourth interest in entire block with well paid for to 4,000-foot test for $30,000.00. Don't answer unless interested. Address Box K-510, The Oil and Gas Journal, Tulsa, Oklahoma.

Oil Industry Printing

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Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

Mailing Lists

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DIRECTORY of the Illinois Oil Basin now going to press. Write Midwest Oil Journal, Box 381, Centralia, Illinois.

Financing

CAPITAL SEEKERS
Put your project before 260 Key-Men. Cost trifling. Details free. AMSTER LEONARD Fox Theater Building, Detroit, Michigan

JOHN MORRIS, Box 5411, Philadelphia studied records 5000 financial houses. Found only 191 buy new issues. $4.00.

Real Estate

FOR LEASE—Five to 10 years, shop now being used by Hydril Co.; two or more acres, all steel building with 15-ton crane, trackage, office building, all utilities, etc. Available April 15.
M. R. DUCEY, Owner
309 Webster, Houston, Texas

Situations Wanted

REFINERY Superintendent: 10 years' experience, desires connection. Box K-481, The Oil and Gas Journal, Tulsa, Okla.

REFINERY ENGINEER, Ch.E., Ph.D., married, 19 years' diversified experience in lub oils, thermal and catalytic reforming and cracking, polymerization, hydrogenation and alkylation processes and engineering design. Desires position with oil company interested in progressing along catalytic lines. Box K-494, The Oil and Gas Journal, 415 Lexington Ave., New York City, N. Y.

REFINERY Engineer, M. E. Graduate, 15 years' experience Refinery and Gasoline Plant Design and Construction. At present employed, desires new connection. Address Box K-502, The Oil and Gas Journal, Tulsa, Oklahoma.

OIL Accountant, Age 42, 15 years' experience—production, refining, drilling, depletion and depreciation schedules, partnership accounts, ad valorem and federal taxes. A-1 reference. Address Box K-501, The Oil and Gas Journal, Tulsa, Okla.

COMPETENT, successful Manager: For Oil Company, Drilling Contractor or extensive oil interests. 20 years' experience. If your operations are not showing sufficient profit write P. O. Box 134, South Pasadena, California.

REFINING ENGINEER — M.S. Degree. Capable and experienced in modern refining operation and processing A-1 Asphalt technologist. Address Box K-511, The Oil and Gas Journal, Tulsa, Oklahoma.

Help Wanted

CHEMICAL ENGINEER with two to three years' experience in natural gasoline plants for work in development department of major oil company in Southwest. In reply give complete information on training, experience, positions held, salary desired, and enclose picture. Address Box K-492, The Oil and Gas Journal, Tulsa, Okla.

PETROLEUM Engineer with successful sales experience in oil well pumping equipment. Preferably under 35 years of age. Qualifications and full particulars desired in first letter. Strictly confidential. Address Box K-491, The Oil and Gas Journal, Tulsa, Oklahoma.

SITUATION open with large Mid-Continent Refinery for refinery draftsman-engineer. Excellent opportunity. Give full details, including salary desired, first letter. Members of our organization notified. Address Box K-490, The Oil and Gas Journal, Tulsa, Oklahoma.

ASSISTANT Superintendent for 2500 barrel complete Pennsylvania Refinery. Chemical engineer with experience in cracking, lubricating and wax plant operation preferred. Apply Box K-505, The Oil and Gas Journal, Tulsa, Oklahoma.

MANUFACTURER has opening for engineer with some experience in designing oil well pumping equipment. Permanent position with chance for advancement. Address Box K-503, The Oil and Gas Journal, Tulsa, Oklahoma.

MANUFACTURER of portable drilling and servicing equipment will accept applications for position as salesman. Must be graduate mechanical or petroleum engineer, with three to four years' experience in both oil field production and sales. State technical school, positions held, and references. Age limit, 40 years. Reply Box K-500, The Oil and Gas Journal, Tulsa, Oklahoma.

PETROLEUM GEOLOGIST and stratigrapher wanted to be in charge of experimental geological work in well logging. Must have experience. Address Box K-506, The Oil and Gas Journal, Tulsa, Okla.

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25 K.W. and 40 K.W. Gas Engines, 220 volts, D.C. Two 100 K.W. Gas Engine-Generator Sets, 220 volts, D.C. 7x6 Ingersoll-Rand ER-1 Air compressor. Six-inch Oster Pipe Threading Machine. Also large stock of lathes, pipe machines, milling machines, etc. Send for our list.
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FOR SALE: Bartlesville Warehouse—7500' 3" 7.50# 11½ Thd. used lapweld regular tubing. I.T.I.O. Co., Bartlesville, Okla.

FOR SALE: Orifice and Positive Gas Meters. GEO. R. MILNER, Okmulgee, Oklahoma.

FOR SALE — At Oklahoma City, 1—Muskogee Model "B" Skid type well service machine with PA-100 International Motor. I.T.I.O. Company, Bartlesville, Okla.

FOR SALE—55-Hp. Bruce McBeth Twin Cylinder Natural Gas Engine, 275 r.p.m., 11-in. bore. W. C. Hudson, Brilliant, Ohio.

FOR SALE—Seminole, Oklahoma, warehouse steel portable building 20' x 86' x 10' and 18'. I. T. I. O. Company, Bartlesville, Oklahoma.

FOR SALE at Oklahoma City Warehouse, large quantity 4½" o.d. 16#, 5" o.d. 15# slotted-perforated liner and Stanciff screen pipe. I. T. I. O. Company, Bartlesville, Okla.

FOR SALE: Bartlesville Warehouse—3300' New & 2600' used 1½" 2.731# Butt Weld Reading Wrot Iron Tubing. I.T.I.O. Company, Bartlesville, Oklahoma.

TRACTORS

Government crawler type Caterpillars size "35" price $375.00; size "65" complete with nigger head winch price $750.00. Slightly used, perfect condition. O. C. Evans, Mount Sterling, Kentucky.

BALL Valve Seat Grinder and equipment to start reconditioning business. Bargain. Jones, 1116 Bixby, Ardmore, Okla.

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1 25 HP Muncie Horz. Oil Engine
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FOR RENT: At Oklahoma City, new 7,000' string 3½" O.D. 13.3# seamless left hand fishing drill pipe with tool joints. I. T. I. O., Bartlesville, Okla.

FOR SALE Two 70 Horsepower Broderick Boilers—good condition. Price $350.00 each. Address Box K-504, The Oil and Gas Journal, Tulsa, Oklahoma.

FOR SALE: 7 Ft. x 20 Ft. Butane welded storage tanks 125# WP, capacity 6000 gallons. I.T.I.O. Co., Bartlesville, Okla.

FOR SALE

25,000 ft. of 4" seamless drill pipe equipped with both full hole and regular tool joints.
10,000 ft. of 7" 24# seamless casing, once run.
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We also have several complete drilling rigs, one with Unitized Draw Works capable of drilling 6,500 ft. The above is located in Shreveport, Louisiana.
We also have 30,000 ft. of 6" screw line pipe located in Oklahoma.
Wire, Write or Phone for Prices

Louisiana Iron & Supply Co.
Shreveport, Louisiana

FOR SALE—$80,000.00 Rotary Rig complete. 10-in. Emsco Unit, 125-350 Boilers, etc. Practically new. Bargain. Roberts Bros., Box 1726, Houston, Texas.

Equipment Wanted

WANTED: Ft. Worth, Wichita or Bucyrus-Armstrong Spudder complete and in perfect condition. State price. J. P. Bell, 434 Alhambra Circle, Coral Gables, Fla.

WANTED: Cardwell Model W Double Drum Combination Drilling Rig, mounted on "Caterpillar" D-7 Diesel Tractor. Must be in A-1 Condition. J. O. Crittenden, 1924 Oliver Building, Pittsburgh, Pennsylvania.

WANTED, Spudder complete, with tools, capable 2000 ft. drilling. Ft. Worth Super or Jumbo D preferred, others considered, must be good, nothing obsolete, sumbit details, invoice, tools, price. A. V. SMITH, 1510 Miller Ct., Owensboro, Kentucky.

FOR SALE—At Oklahoma City, one 10" Butler elevator with several sets extra slips, also, extra slips for 10" Butler spider. I.T.I.O. Co., Bartlesville, Okla.

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NOTICE OF SALE OF OIL ROYALTIES TO LIQUIDATE RECEIVERSHIP ESTATE

The District Court of the United States, Southern District of California, Central Division, has ordered sold, for cash, to the highest bidder on March 7, 1940, at two o'clock P.M., at the Broadway Entrance of the Hall of Records, Los Angeles, California, the following royalties, to-wit:

(1) ACME LEASE—
5% overriding royalty in Well No. 1, and 10% overriding royalty interest in Wells Nos. 2 and 3, situated on Lots 1 to 16 and 25 to 30, North Long Beach Tract, County of Los Angeles, State of California.

(2) BISHOP LEASE—
2.083% overriding royalty interest in Lots 1 and 2, Block 316, Huntington Beach, County of Orange, State of California.

(3) SEEPLE NO. 6 WELL—
A 2% participating royalty interest in North ½ of Lot 12, Block "A," Mountain Meadow Tract, Signal Hill (Long Beach), County of Los Angeles, State of California.

(4) BIDDLE LEASE—
A participating royalty interest in four wells—1/12 of 1% in Wells Nos. 29 and 30; 1/24 of 1% in Wells Nos. 31 and 32, situated on Lots 12 and 13, Block 52, Santa Fe Springs, County of Los Angeles, State of California.

(5) WHISTON AND COX LEASE—
1% of 40%, or 0.4 of 1%, participating royalty interest in three wells, known as Alexander Nos. 1 and 2, and Rhode No. 3, situated on Lot 6, Block 82, Santa Fe Springs, County of Los Angeles, State of California.

(6) CRAWFORD 1A LEASE—
A 1 1/24% landowner's royalty interest in Lots 2 and 3, and ¾ of Lot 4, Block 88, Santa Fe Springs, Los Angeles County, State of California.

(7) SIMPLEX LEASE—
A 20% participating royalty interest in Well No. 20, and a 5% overriding royalty interest in Well No. 26, situated on Lots 87 to 90, inclusive, North Long Beach Tract, County of Los Angeles, States of California.

(8) HANCOCK LEASE—
A 1% landowner's royalty interest in Wells Nos. 13 and 14 situated on Part of Lot 11, Block "H," Signal Hill, County of Los Angeles, State of California.

(9) GIBSON LEASE
A ¼ of 1% landowner's royalty interest in a sixty-acre tract, under lease to the Union Oil Company of California, in Section 36, Township 27 South, Range 20 East, M. D. B. & M., County of Kern, State of California.

(10) ARCHER LEASE—
A ½ of 1% overriding royalty interest in well and lease of Lot 10, Block 68, Santa Fe Springs, County of Los Angeles, State of California.

(11) PULLIAM NO. 1 LEASE—
A 1% participating royalty interest in Lots 15 and 16, Block 87, Santa Fe Springs, County of Los Angeles, State of California.

(12) BUCKBEE LEASE—
A 1/176 of 1% overriding royalty interest in the Buckbee 1A Well, and a 130/366 of 1% overriding royalty interest in the balance of the Buckbee wells located at Santa Fe Springs Oil Field, County of Los Angeles, State of California.

(13) KOONTZ LEASE—
A 3/200 of 1/173 of 1% overriding royalty interest in the entire Koontz Lease located at Santa Fe Springs, County of Los Angeles, State of California.

(14) ELLIS LEASE—
A 1/240 of 1% participating royalty interest in the Ellis Lease, located at Santa Fe Springs, County of Los Angeles, State of California.

(15) SUNSET PACIFIC NO. 3 LEASE—
Nature and extent of royalty interest, if any, and exact legal description unknown. Lease is located at Santa Fe Springs, County of Los Angeles, State of California.

(16) PORTER NO. 2 WELL—
Nature and extent of royalty interest, if any, and exact legal description unknown, lease is located at Signal Hill, County of Los Angeles, State of California.

(17) SANTA BARBARA LEASE—
A 1½% participating royalty interest in the Santa Barbara Lease located at Santa Barbara Mesa, County of Santa Barbara, State of California. Exact legal description is unknown.

For terms of sale and further particulars apply to undersigned.

JOSEPH J. RIFKIND
Receiver in Equity of Pan California Oil Corporation
535 Rowan Building Los Angeles TRinity 4152

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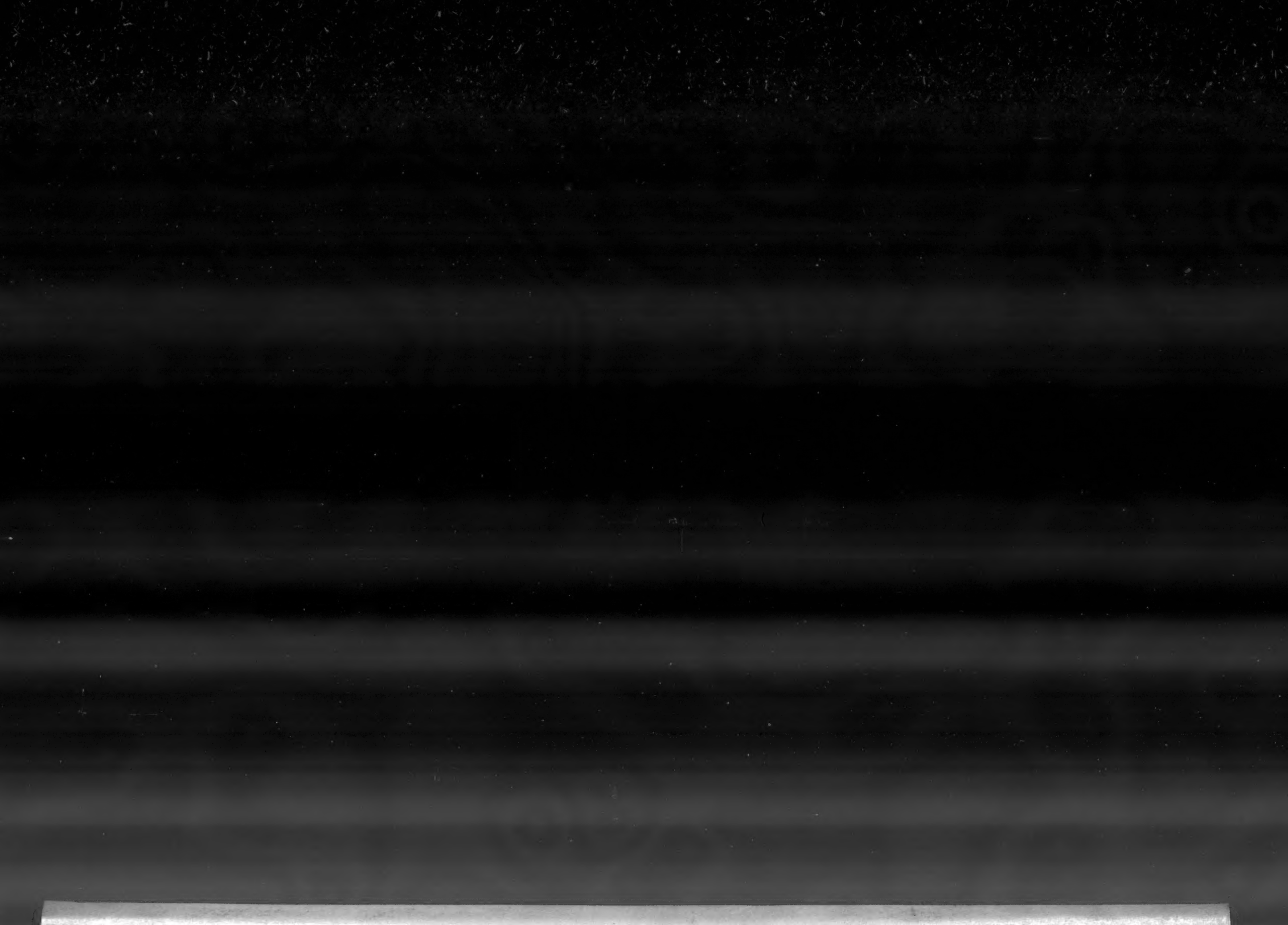
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